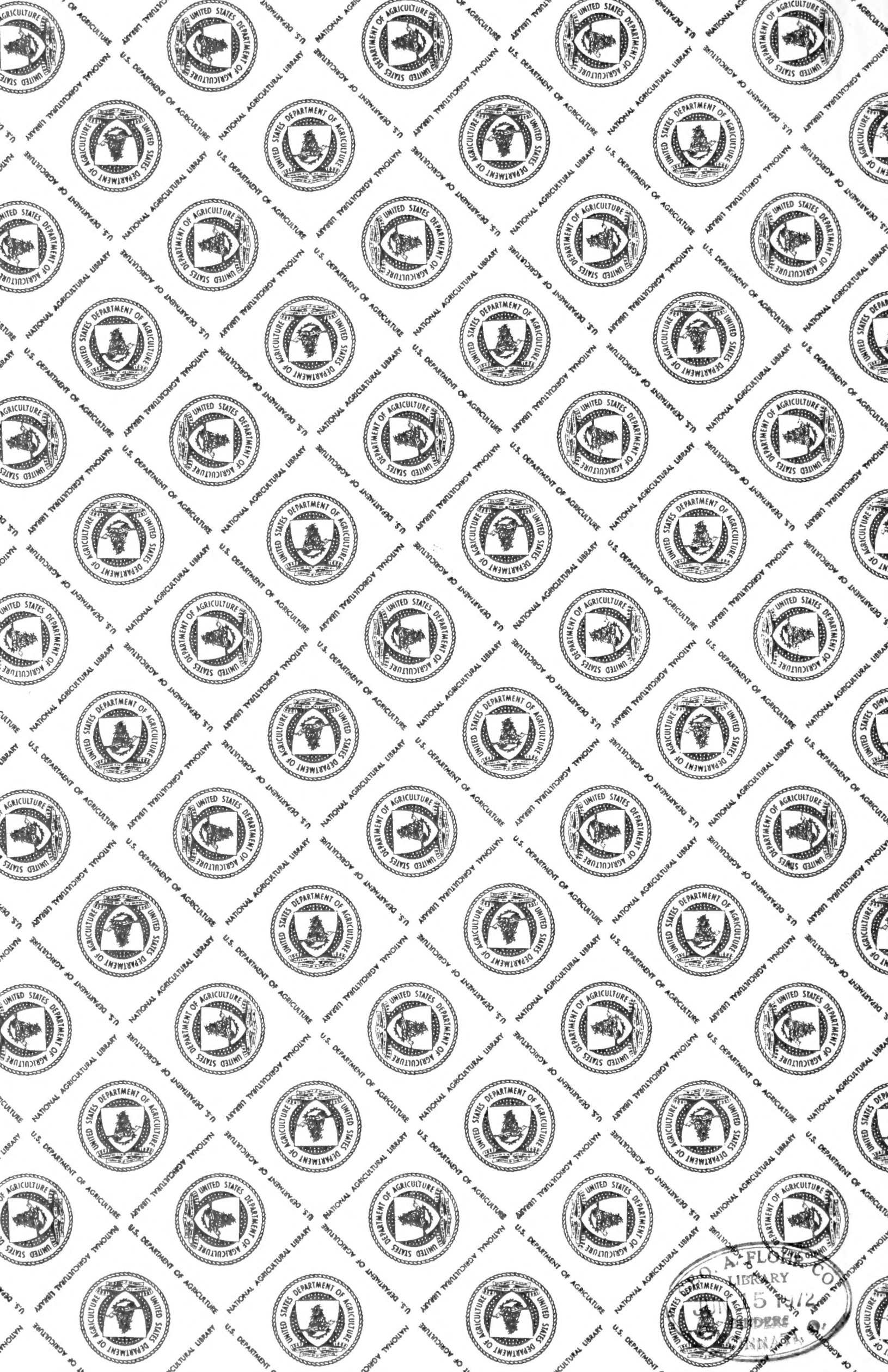
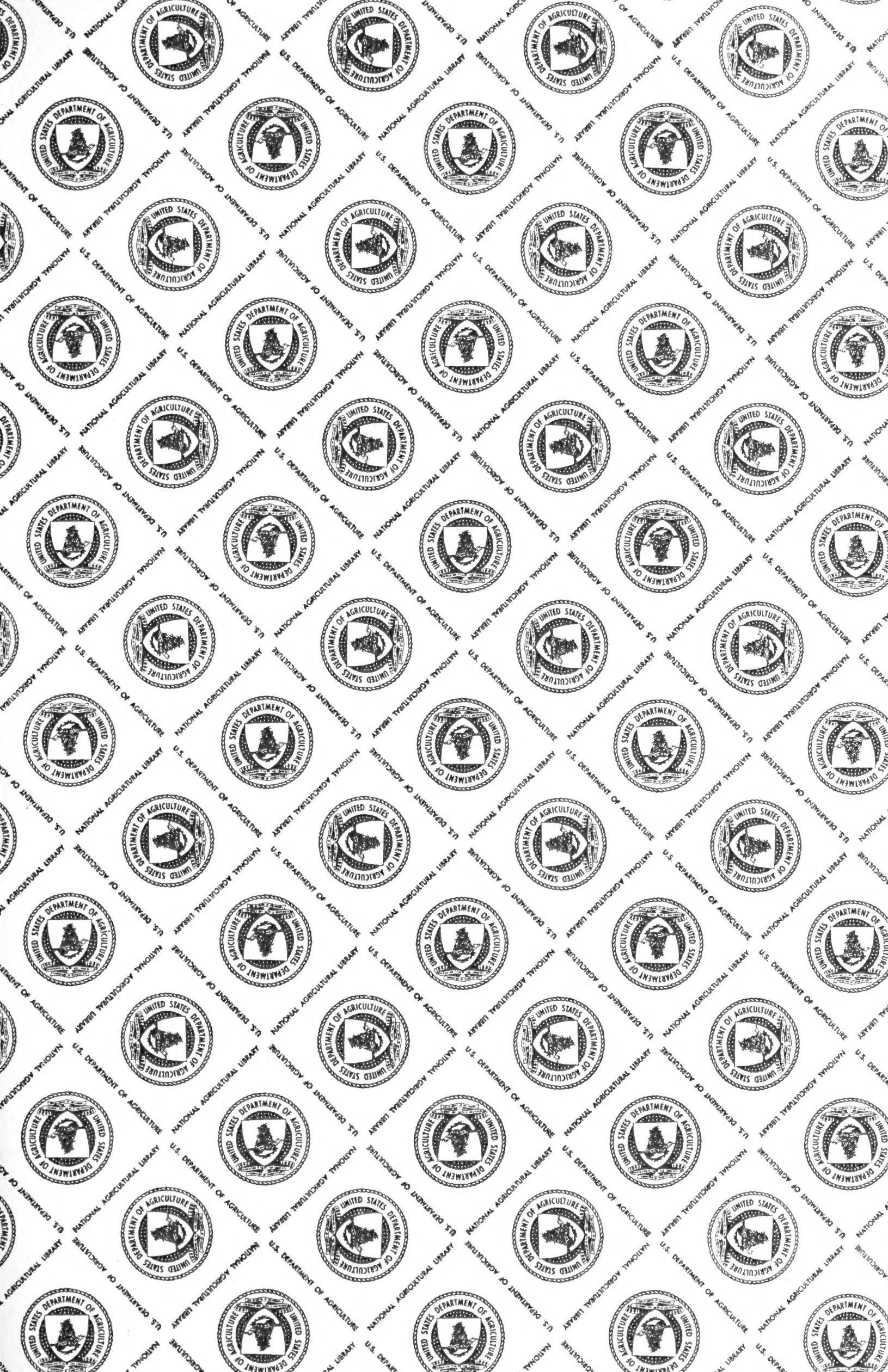


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THE COTTAGE GARDENER,

COUNTRY GENTLEMAN'S COMPANION,

AND

POULTRY CHRONICLE.

A JOURNAL OF HORTICULTURE, RURAL AND DOMESTIC ECONOMY, BOTANY,
AND NATURAL HISTORY.

CONDUCTED BY

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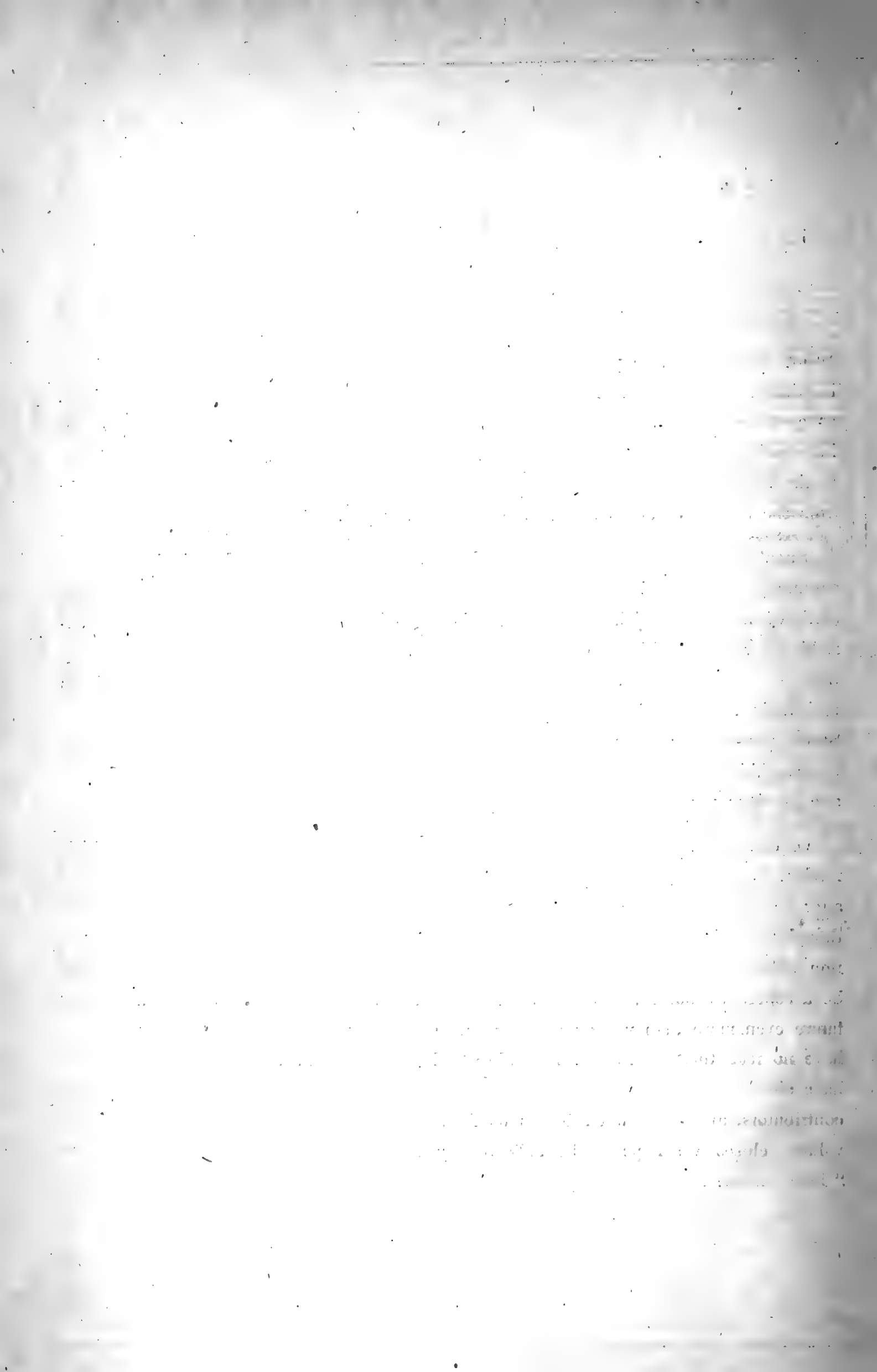
1898

TO OUR READERS.

IF our eloquence were proportionate to our gratitude this address would exceed any of its sixteen predecessors. Never during any period of our career has our success been so great as during the last six months—success in the abundance and variety of our information and illustrations—success in the amount of our circulation—and success in the influx of advertisements. Such results command gratitude, and it flows warmly from the bottom of our hearts to the point of our pen.

Such success bids us pause and dwell upon its causes; and, referring only to sublunary means, we believe it to be the unwearied effort to be useful, and the genial spirit of kindness which actuate every head, and heart, and hand, aiding and enriching our pages with their outpourings. “YOU COTTAGE GARDENERS,” writes a lady from the banks of the Tees, “seem a brotherhood of Samaritans, aiding both plants and their cultivators,” and no greater praise do we covet; but one gentleman from Stoke-upon-Trent gives us credit for helping also to fill his exchequer, for he says, “I can say this much for your paper—I have received numerous applications for eggs, and all from my advertisement in its pages.”

Of one fact we are well aware, and it never fails to be appreciated by the British reader: every contributor to our columns is a searcher after truth, writing as if hereafter he would have to account for what he has written, as well as for what he has thought and done, and as if anxious, in all he writes, to give only trustworthy information. Such, and such only, are our “brotherhood,” and we feel assured that this will be accepted by our readers as an earnest that it will be our endeavour to make our future even more than worthy of our past. Gardening is making giant strides, but we have no fear that we shall not be able to keep pace with the movement which we have aided to accelerate. Time hath not yet thinned too far the locks of our old contributors, and every week brings us fresh and vigorous aid, so that when another volume closes we hope to be able to say truthfully with honest old Fitzherbert, “Thus endeth this *ryghte profytable* boke of husbandry.”



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WEEKLY CALENDAR.

Day of Month.	Day of Week.	OCTOBER 7—13, 1856.	WEATHER NEAR LONDON IN 1855.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
7	Tu	Bembidium Spencii.	29.370—29.250	64—39	S.	.03	13 a 6	23 a 5	9 56	8	12 15	281
8	W	Sphodrus collaris.	29.546—29.467	67—36	S.W.	.09	15	21	11 20	9	12 31	282
9	Th	Scaphisoma Agaricinum.	29.512—29.488	62—41	W.	.09	16	18	morn.	10	12 48	283
10	F	Staphylinus olens.	29.786—29.678	58—39	N.W.	.02	18	16	0 50	11	13 3	284
11	S	Aleochara impressa.	29.697—29.573	61—52	S.W.	.25	20	14	2 19	12	13 19	285
12	SUN	21 SUNDAY AFTER TRINITY.	29.644—29.590	62—37	S.W.	.33	21	12	3 52	13	13 33	286
13	M	Mycetophagus undulatus.	29.649—29.585	60—39	W.	.01	23	10	rises.	☺	13 48	287

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 60.6°, and 42.5°, respectively. The greatest heat, 76°, occurred on the 13th, in 1845; and the lowest cold, 27°, on the 12th, in 1850. During the period 99 days were fine, and on 97 rain fell.

When we commence a volume we always consider what new features we can introduce, what improvements we can make, and who, distinguished for ability, we can add to our staff. On the present occasion we have succeeded in doing much in all these modes, and the following is only one example of our intentions in the present volume.

NATURAL HISTORY OF THE RANUNCULACEÆ.

This great family is composed of herbaceous or suffruticose plants, with alternate, much-divided leaves, which are dilated at the base, and form a sheath half round the stem; in the Clematis alone are they opposite. The flowers vary very much in their disposition; sometimes they are accompanied with an involucre formed of three leaves, either remote from the flowers, or close to them, and cup-shaped. The calyx is polysepalous, 3-6, often coloured and petaloid, rarely persistent, imbricate, occasionally valvate or duplicate. The corolla is polypetalous, sometimes wanting, and then the calyx is highly coloured and large, having the appearance of a corolla. Petals distinct, inserted under the ovary; in number equal, double, or triple that of the sepals; sometimes wanting; in some cases they are flat, with a small indentation or glandular scale at their internal base, but often deformed, or irregularly hollowed into the form of a horn or spur, and suddenly clawed at the base. The stamens are generally numerous, indefinite in number, distinct, and situated under the ovary. Anthers continuous with the filaments. The seed-vessels or carpels are indefinite in number, sometimes one-seeded, and collected into a sort of capitule; or many-seeded, and gathered together circularly; and sometimes more or less closely united, so as to form a many-celled pistil, each terminated by a short and simple style, which is usually lateral. The fruits are either one-seeded, unopening, in capitules, or in spikes; or they are aggregated capsules, distinct or united, sometimes solitary, one-celled, many-seeded, opening by their internal suture, which bears the seeds; very rarely is it a many-seeded berry. The seeds are indefinite in number, without arillus; erect, pendent, or horizontal. The embryo, which is very small, has the same direction as the seed, and is contained in the base of a horny albumen.

The numerous genera of this family may be divided into two great sections, according as the carpels are one-seeded or many-seeded.

DIV. 1.—CARPELS ONE-SEEDED.

Tribe 1.—Clematideæ.—Fig. 1. Calyx in æstivation valvular, or induplicate. Some with no petals, others with the petals flat and shorter than the calyx. Carpels not opening, one-seeded, and terminated with a long, bearded style. Seed pendulous. Perennial plants, or climbing shrubs, with opposite leaves.

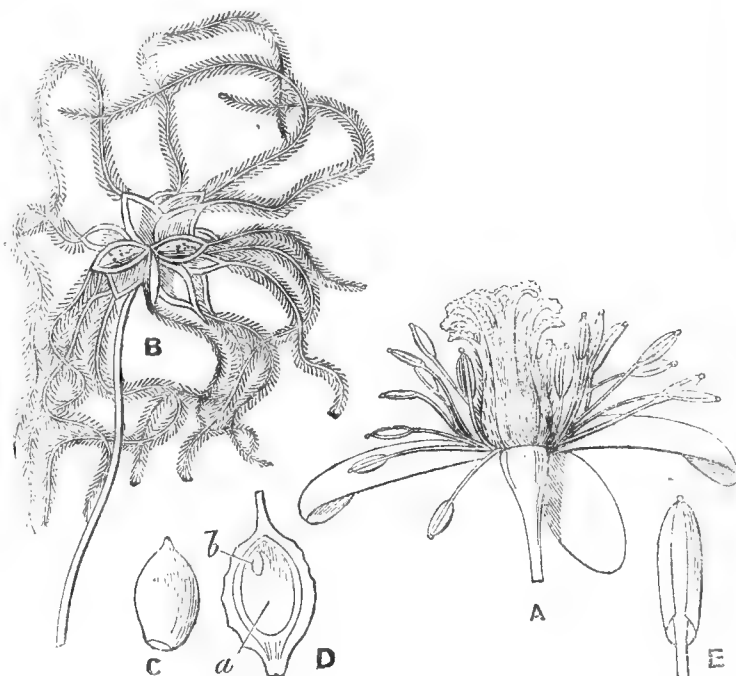


Fig. 1. Clematis angustifolia. A. Flower with part of the sepals removed to show the pistil and the insertion of the stamens. B. A pericarp. C. A seed. D. Achene and seed cut vertically. a. The perisperm. b. The embryo. E. Back view of a stamen.

GENERA.—Clematis, Atragene, Naravelia.

Almost all of these are hardy, and may be cultivated in any good, common garden-soil. They are propagated by seeds, cuttings, layers, and grafting; and the herbaceous species by partition of the roots.

Tribe 2.—Anemoneæ.

Calyx usually coloured; in æstivation imbricate. Some with no petals, others with petals which are flat. Carpels not opening, one seeded, sometimes terminated with a long, bearded style. Seed pendulous. Herbaceous plants, with alternate or all radical leaves.

GENERA. — Cyrtoryncha, Thalictrum, Anemone, Hepatica, Hydrastis, Knowltonia, Adonis, Hamadryas, Callianthemum, Aphanostemma.

The most of these are hardy plants, but some are greenhouse perennials; they are propagated by seed and by division of the roots. In some genera, as Anemone, the roots may be preserved dry during winter, and planted again in the spring.

Tribe 3.—Ranunculeæ.—Fig 2.

Calyx in æstivation imbricate. Petals with the claw tubular, bilabiate, furnished with a scale at the base of the interior side. Carpels one-seeded, not opening. Seed erect. Plants with a herbaceous stem and alternate or radical leaves.

GENERA. — Myosurus, Casdea, Ceratocephalus, Ranunculus, Ficaria, Oxygraphis.

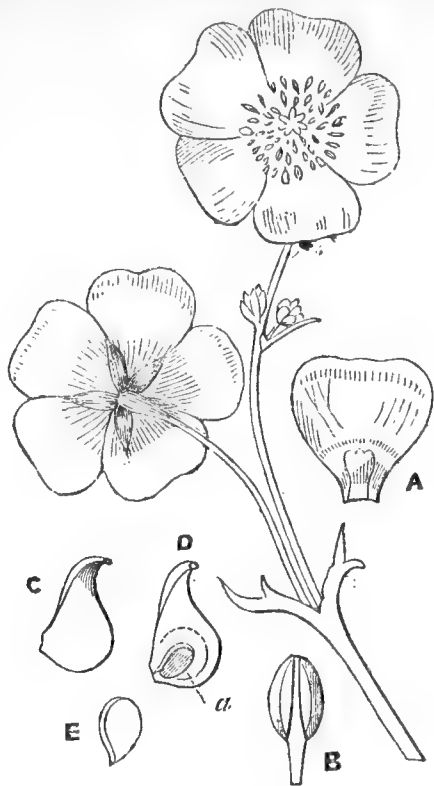


Fig. 2. *Ranunculus acris*. A. A petal. B. Front view of a stamen. C. One of the ovaries. D. The same cut longitudinally. *a*. Ovule. E. The ovule magnified.

These are propagated by seeds, and by division of the roots.

DIV. 2.—CARPELS MANY-SEEDED

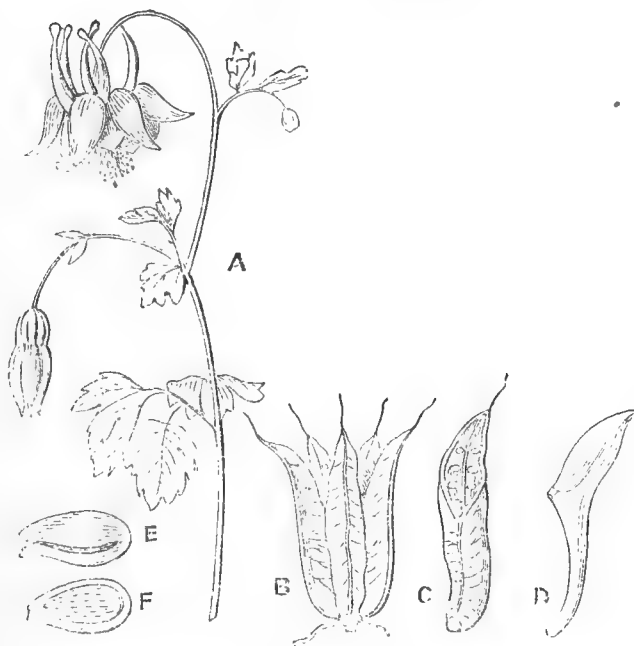


Fig. 3. A. *Aquilegia Canadensis*. B. Carpels in a whorl. C. A single carpel. D. A petal. E. The seed. F. The same magnified.

Tribe 4.—*Helleboreæ*.—Fig. 3. Calyx in æstivation imbricate. Petals in some wanting; when present irregular, bilabiate, and tubular. Carpels capsular, many-seeded, and opening laterally. Herbaceous plants, with alternate or radical leaves.

GENERA.—*Psychophilus*, *Caltha*, *Trollius*, *Eranthis*, *Helleborus*, *Isopyrum*, *Enemion*, *Coptis*, *Garidella*, *Nigella*, *Aquilegia*, *Delphinium*, *Aconitum*.

These are all hardy herbaceous plants, and may be cultivated in common garden-soil. They are propagated by seeds, or by division of the roots.

Tribe 5.—*Pæoniæ*.—Calyx in æstivation imbricate. Petals flat, or wanting. Carpels follicular, many-seeded,

and opening; or a berry; sometimes one-seeded by abortion. Herbaceous plants or shrubs, with alternate leaves.

GENERA.—*Trautvetteria*, *Actæa*, *Botrophis*, *Actinophora*, *Cimicifuga*, *Xanthorrhiza*, *Pæonia*.

These are propagated by seeds, by division of the roots, and by layers.

This last tribe may be considered as almost a distinct family.

GEOGRAPHICAL DISTRIBUTION.—The *Ranunculaceæ* are found distributed over the whole surface of the globe. They are abundant in the cold and temperate climates of the northern hemisphere; frequent in Europe, from the shores of the Mediterranean to the Arctic regions; from the sea-shore to the snow range of the mountains; more rare in America, and still more so in temperate Asia. They are pretty numerous in the southern hemisphere, but rarely between the tropics, except at high altitudes on the sides and summits of mountains.

PROPERTIES AND USES.—All the *Ranunculaceæ* are more or less acrid and poisonous. This acidity, which exists in almost all the parts of these plants, appears to depend on a volatile principle, which is easily destroyed by the effect of boiling water, or even simply by drying. It is much more energetic in the roots than the exterior parts when it is dissipated in the air, or in the surrounding water; although, in certain cases, even these exhibit it in a very high degree, as in the Monkshoods, from the flowers of which bees are said to have collected poisonous honey. Nevertheless, this destructive or injurious principle loses as much by drying as by ebullition, for which reason certain species, strongly poisonous in the fresh state, may serve as food to man being cooked, or may be given with impunity to cattle in the state of fodder. Thus the young shoots of *Clematis vitalba* are eaten in Piedmont, and the leaves of *Ficaria ranunculoides* are used as a potherb in some parts of France.

The *CLEMATIDÆ* possess the acrid principle in a very eminent degree, perhaps even more so than either the *Anemoneæ* or *Ranunculeæ*. If the fresh leaves of *Clematis vitalba* are chewed, there will be found in the mouth a sensation of heat and smarting, and frequently the tongue is covered with small vesicles, which turn to ulcers. This taste and that action are, nevertheless, much less in the dried plant. If the fresh leaves bruised are applied to any part of the body, an active inflammation ensues, followed by hard swellings, which terminate in ulcers; hence beggars frequently employ this as a means for creating artificial sores on their limbs to excite pity. Taken internally, the juice or extract produces all the symptoms of poisoning by the acrid poisons. In Madagascar the *C. Mauritiana* is used instead of *Cantharides*.

(To be continued.)

A MEETING of the British Pomological Society was held on Thursday, the 2nd inst. Robert Hogg, Esq., Vice-President, in the chair.

A new seedling Grape was received from Mr. Melville, gardener to the Earl of Roseberry, Dalmeny Park, near Edinburgh. It is a cross between *Black Prince* and *Black Damascus*, and partakes very much of the character of the former. One of the bunches exhibited measured fourteen inches in length, and was remarkably well set. The bunch is not shouldered. The berries of good size and roundish, inclining to oval, but not so long as those of the *Black Prince*; skin of good texture, a very dark purple, almost black, and covered with bloom. Flesh green, tender, and melting; but as the fruit was not ripe, and as it had, unfortunately, been packed in contiguity with moss, the true flavour could not be as-

certained. Each berry contains from two to three seeds. It was said to hang well. The members present requested that another specimen should be sent, in a more advanced state of ripeness, to the next meeting of the Society.

Mr. Spary, of the Queen's Graperies, Brighton, exhibited some beautiful bunches of *Black Hambro'*, which were remarkable for their intense colour and fine bloom; the berries were large, and, altogether, the bunches displayed every evidence of superior cultivation.

Mr. Ivery, of Dorking, again produced a bunch of his new *Early White Grape*, which was, as at the last meeting, highly approved, as being a valuable addition to the varieties already in cultivation, and as being a much more desirable variety than either the Muscadine or Sweet Water, on account of the size of the bunch and berry, as well as being a good setter.

Mr. H. Eckford, gardener to Earl Radnor, Coleshill, near Highworth, Wiltshire, exhibited two splendid specimens of *Ripley Queen Pines*, one of which weighed 5 lbs. 10 ozs., and the other 5 lbs. 5 ozs.; they were very handsome, and were examples of very superior cultivation.

Plants of *Sir Harry Strawberry* were again exhibited by Mr. Underhill, of Birmingham, laden with fruit and well-furnished with bloom even at this late season; and the fruit then exhibited was the *fourth crop* from the same plants during the present year. Some of the berries were as large as a walnut, and, though not so highly coloured as those exhibited at the August meeting, they were richly flavoured.

Mr. Thomas Francis Rivers, of Sawbridgeworth, produced very fine specimens of the *Royal George Peach*, grown in an orchard-house with hedge-sides. The colour was very beautiful, the size large, and the flavour excellent. Also, specimens of a new Belgian Peach, *Leopold Premier*, the colour of which is pale, with a few crimson dots strewed over the surface; but the flavour was inferior to Royal George. He also exhibited specimens of a late Nectarine which he had under the name of *Late Melting*. It was not quite ripe, and Mr. Rivers was therefore requested to endeavour to produce it at the next meeting. Specimens of *Violette Hâtive*, grown in an orchard-house, were found to be excellent in flavour.

Mr. Spencer, of Bowood, sent some very fine specimens of *Barrington*, *Late Admirable*, *Walburton Admirable*, and *Chancellor Peaches*. The latter were not quite ripe; but Barrington was found to be of exquisite flavour; Late Admirable very fine and melting; and the Walburton Admirable was, in our opinion, the best of the late varieties, but more rich in flavour, more saccharine, and more vinous than Late Admirable.

Guthrie's Late Green, *Bryanston Gage*, *Reine Claude de Bavay*, and *Belle de Septembre* Plums were exhibited by Mr. Rivers. The first three were considered of excellent quality. Bryanston Gage was very rich and full-flavoured, and Belle de Septembre, which is a culinary variety, was admired for its beautiful carmine colour and fine bloom. We have seen this variety when cooked, and found it one of the most desirable culinary Plums in cultivation. Its juice is of a beautiful carmine colour, and its flavour is excellent. The tree is also an excellent bearer.

Mr. Whiting, of Deepdene, near Dorking, sent specimens of *Coe's Golden Drop* and *Belgian Purple* Plums, both from a wall. The former was very rich in flavour, and the latter very much superior to those which the same gentleman sent to the last meeting. It is generally considered a variety more adapted for culinary than for dessert use; but those which were exhibited on this occasion possessed a richness which qualified them for the table.

Mr. Paul, of Cheshunt, brought *Coe's Late Red* Plum, some of which were partially ripe, and others quite

hard. Mr. Paul stated that this variety succeeded well with him, and ripened perfectly, but that he found the tree a bad bearer; while Mr. Rivers mentioned that on his soil the tree was an abundant bearer; but the fruit, although it would hang till Christmas, never came to maturity.

Mr. Rivers exhibited a dish of *Belle Agathe* Cherry, a small, sweet-flavoured variety, in size and shape resembling a good-sized horse-bean, and of a Bigarreau colour. It was considered as a curiosity, and would be useful in large establishments, where a variety of dishes were required for the dessert at a late period of the season. Another fruit, adapted for the same purpose, also from Mr. Rivers, was a *Raspberry*, produced from a plant which had been raised by crossing the Raspberry and the Blackberry, or Bramble. The plant has all the habit of growth of the Common Bramble, does not throw up suckers, and produces fruit most abundantly; but the fruit is of the size and texture of the Raspberry, and the flavour, though like that of the Raspberry, is much more lively and piquant, and of a dark purple colour.

The following gentlemen were elected members:—

J. PENN, Esq., 3, Onslow Square, Brompton.

A. AINSLIE, Esq., Dodridge Ford, Edinburgh.

G. B. RUSSELL, Esq., M.D., Fermoy, Ireland.

ARTHUR HENDERSON, Esq., Pine-Apple Place, London.

DR. NEWINGTON, of Ridgeway, Ticehurst, Sussex.

MR. F. BREWER, Pine-Apple Place, London.

MR. HENRY ECKFORD, Coleshill Gardens, Highworth, Wilts.

MR. WALTER REID, Sydenham Hill, Surrey.

THE APPROACHING FORCING SEASON.

WITH regard to in-door fruits the season is now on the wane, and people will soon turn their attention towards the prospects of a coming year. Little can now be done with reference to fruits to be found in our hot-houses. *Pines* will have received their last handling, unless it be the renewal of bottom-heat for the winter, and an occasional watering; the rest will be chiefly mere routine. Of *Grapes* the summer kinds will be nearly gone, certainly all the forced *Grapes*; and the chief points during the coming autumn and winter will be to secure the hanging fruit from decay, to provide against the attacks of wasps, birds, or mice, and to keep a jealous eye on that terrible pest, the Vine mildew. The latter is difficult to extirpate when established, but not particularly so on its approach. Sulphur is, I believe, the only known remedy: the worst of it is, that it so disfigures both trees and fruit. Of course, gardeners aim at fine bloom, and no doubt many a man has permitted the mildew to get ahead through a very natural repugnance to messing and disfiguring his crop; and, indeed, it is somewhat grievous; but better sulphured *Grapes* than none. To return: *Peach*-houses will be clearly stripped of their contents in the fruit way, and the trees inclining to rest. Other fruits in nearly a similar condition.

My chief purpose in the present remarks is to furnish a few hints to the uninformed regarding that *rest* which all fruits require, without which no success can be expected, and the character and conditions of which much influence the future year's success.

Let us begin with the *Vine*. The condition of Vines after forcing differs considerably. Some gallop, as it were, into a state of repose; others are with much difficulty quieted down, and continue to produce laterals as fresh as ever for many weeks. It is scarcely necessary to add, that the latter case argues a most active root, with much energy of constitution; the former, perhaps, in the main, a case of partial ex-

haustion, through bearing heavy crops. In the latter case there is little the forcing gardener can do, unless it be to get them pruned as soon as the foliage begins to fall. The other case, however, requires some management in order to coax the trees gradually into a state of rest; and I may here advert to it. There can be little doubt that all laterals produced after a crop of Grapes has thoroughly ripened, and are cut, are detrimental in a certain sense. They shade too much the principal foliage, on which, at that precise period, much depends; and, indeed, may prove, to a certain degree, robbers of the system of the tree, inasmuch as they may detract more than they are allowed or able to repay. Only one thing can be urged with regard to their services. They may serve for awhile to extend the volume of the roots, or to promote a greater degree of activity in them. It is, however, very doubtful whether what they may accomplish is equivalent to the amount of mischief they may occasion, by compromising the position of the tree with regard to future forcing; for the old moral maxim, "early to bed and early to rise," is as much applicable to a Vine or Peach as to a man. I should advise, therefore, that much caution be exercised as to the free permission of late growths, and that they by no means be allowed to shade the chief foliage. But there is yet another point. The latter continues comparatively green sometimes when, by the course of the season, we might fairly expect it to rest; and what is to be done? arises in many a mind. Here we may fairly fall back on what is called "the ripening of the wood." "Heat, heat, heat!" the Vines would say, were they gifted, like Rousseau's animals, with the power of speaking; "heat us, but do not burn us!" This is the language I must beg to put in their vegetable mouths. Heat, then, must ripen the wood of Vines; heat must assist them in casting their foliage in a free way.

Peaches, too, produce, more or less, late or after-growth, according to their strength and the circumstances of their root action; in other words, in proportion to their unexhausted vigour and the power of the soil in which they grow. Peaches should by no means be allowed to possess breast-wood projecting beyond the surface of the tree long after the fruit is gathered. Such is very prejudicial to that thorough ripening of the wood and plumpness of the blossom-buds so essential to the next year's crop. I would also suggest that every terminal shoot be pinched on Peaches still continuing to extend; of course, not many are in that condition. Young trees, however, in a generous soil, scarcely know when to stop, especially if they have been liberally watered at the root; and, with regard to watering, there can be no question that the soil of Peaches and Vines for early forcing should be kept as dry as possible, short of being completely dusty, from September to about a fortnight or so before closing the houses for forcing. This, as much as a decline of temperature, has a tendency to induce a state of rest; and the latter should continue two months of a decided character; but I think we may fairly date the commencement of the real rest period from the moment the foliage turns yellow and the leaves commence falling; and this, as to Peaches for very early forcing, should, if possible, be brought to take place about the middle of September at latest.

Here let me point to that fearful pest of both plant and fruit-house, the *red spider*. No tree is more liable to injury from this source than the Peach or Nectarine. Their first approaches, too, are of so insidious a character that, with amateurs or young beginners, the trees may be most seriously injured before they are aware of the character of their visitors. They must be sought for on the back of the leaves, where, probably, the richest secretions are to be found; and, at present, there is no remedy equal to sulphur dusted finely but liberally on

the back of the foliage with a powder-puff or other means. Sulphur acts as a preventive, too; and syringing heavily morning and night in a battering kind of way is another preventive; but these, however, are matters pertaining more to spring and summer culture. I am now speaking of sulphur more as a remedy at the resting time.

However trees may be attacked by the red spider in early summer it is certain that its most severe visitation may be expected soon after the stoning period is complete. This, with out-door Peaches, is about the end of July. Indeed, we not unfrequently find trees in Peach-houses suddenly attacked just before the leaves begin to lose their summer's verdure. I have known a tree thoroughly invested at such a period within one fortnight.

I may here just advert to *fruit-trees in tubs or pots*, and intended for forcing. Now that orchard-houses are so rapidly on the increase, there must be many thousands of pot fruit-trees in the kingdom, and no small number in the hands of amateurs, who can scarcely be called first-rate gardeners. Many of these trees have, doubtless, been plunged during the summer—all ought to have been; and plunged trees will root through the bottom or sides of the pots. Now, such for early forcing should have been disturbed, in order to break away their outside roots, about the first week in September; and where such has not been the case, I advise that it be done immediately. This will give them a slight check of much service as to future operations; it will force forward the rest period, which will give the trees a longer nap. Such pots will, of course, have been placed in a very light situation through the summer; and if their foliage has fairly turned yellow, they would be benefited by being plunged on the north side of a wall or other cool place. This will be an additional incitement to rest, and will render them very susceptible when introduced to warmth; but, above all things, let me advise that the pots or tubs be plunged. For this purpose a high and dry plot of ground should be selected; stagnation beneath must be studiously avoided. I would drain as carefully for this purpose as for a Vine border. I would advise that this border surface or bed be nine inches above the ground level, and that the pots or tubs be plunged overhead or otherwise covered. The preservation of the surface roots is of as much importance in this case as in that of border trees, and even more so; and these are sure to receive more or less damage, if close to the surface, as they ought to be, from the frost.

I may advert to *Strawberries* for forcing. These by the end of September should have firm and plump crowns, feeling as large as a big nut. Many persons leave Strawberry pots on the surface of the ground all the summer, but this is by no means advisable. There can be no doubt that the roots on the sunny side of the pot suffer much. But here I advise all who have Strawberries in pots to plunge them immediately, if not done, on elevated ash-beds, as in the case of the fruit-trees in pots, with this exception—that the Strawberries have a warm, sunny situation, for they will, by the natural decline of the season, be subject to a sufficiently low temperature. There can be little doubt that Strawberry leaves—those of earlier formation—carry on their elaborations for the benefit of both crown and root up to the very edge of winter.

R. ERRINGTON.

CLAPTON NURSERY.

I HAVE seen so many things during this vacation, that I am forced to mix them without finishing any one out of hand. The conservatory and the modes of culture at Shrubland Park, with the fruit and forcing departments under a new dynasty, are too good to be given as

tail-pieces to a long story, so I shall begin them afresh next week or the next to that, and for the present I continue the visits to some of the London Nurseries.

I never yet reported that I have grown in "the Experimental" the New Holland Pitcher Plant by the side of the *Lady Plymouth* Geranium since last February, and that it is now as fine a plant as any of the kind in the Clapton Nursery; but the difference made by the two modes of culture is very singular. Messrs. Low's plants, under bell-glasses in a warm house, produce more pitchers than leaves; my plant, all but with open air cultivation, has made only one small pitcher, but twice as many leaves, and much better looking leaves than those made in confinement.

Our Irish friend, "ITALICUS," will be glad to learn that here, at Clapton, they grow the *Meyenia erecta* by the thousands, and sell it by the dozen for "planting out" in the south of Ireland, first for its bloom, and next for its young shoots for making baskets with. There is no end to the numbers they have of it for English and Scottish greenhouses, and warm conservatory and mixed borders during the summer; but for stove cultivation they say it is not at all suited.

Thyrsacanthus rutilans, the finest winter-flowering stove-plant we have, is here treated just like a half-hardy plant, and like *Meyenia erecta*; but in Ghent and Brussels they get it from cuttings early in the spring, and turn it out of doors all the summer. In the autumn it makes a kind of Love-lies-bleeding fringe round the Orange-tubs, the little pots standing in a circle inside the tub, and the drooping, crimson fringe hanging all round.

The *Clerodendron Bungii*, or *foetidum*, is all but hardy on the Continent, and ought to be more so in England. It dies down like a Fuchsia for the winter, and blooms freely on the young summer growth, just like the *Brugmansias*, where they are taken good heed to.

The lovely *Sonerila margaritacea*, a dwarf, spotted-leaved Melastomad, comes from cuttings in nine days, and in sixteen more days is fit for the market, and worth from thirty to forty penny-pieces. The dearest is the cheapest in the long run.

They have a large stock of a new hardy *Oak* with fern-like leaves, got over from Mackay of Liege, who seems to graft them as easily as Apples and Pears. Twenty years ago these would cost £5 a-piece, owing to the difficulty of increasing them. Now they "come out" cheap as bedding Variegated Geraniums.

After seeing the grafted standard Geraniums at the Crystal Palace Show, I want to see that plan followed out everywhere, and I have just got a "sampler" plant here to learn from how to graft Geraniums to a nicety. It is the old classic favourite with us all, the Catalonian Jasmine (*J. grandiflorum*), grafted from a foot to twenty inches high, and from a foot to eighteen inches diameter of the head. All grafted only last March by some one on the Continent, from whom Mr. Low's traveller bought the whole of this season's stock (400), all but fifty plants, which went to M. Mieliez, of Lisle. Every one of the 350 little standards was in bloom out in the open air; and any one of them would show how to graft Geraniums, by splitting the stock, better than all the reading in the world. The Italians still persist in grafting it on the common Jasmine, on which it does not live long, owing to the fight with suckers; but the French have now the monopoly; for they use the *Jasminum ochroleucum* for a stock, on which the Catalonian lasts and improves for ever so long. It would not be a bad speculation for some "doctor's boy" or another to get a few strong plants of *Jasminum ochroleucum*—the original plant from Buenos Ayres, by Mr. Tweedie, in 1836, is still at Clapton—make cuttings of it, and graft the Catalonian on it for the London trade. They were in demand when I was a boy, and will never go out of fashion, as they flower the whole winter.

Berberis Nepalensis, which is as scarce in some places as any of them, is here actually used as a stock to graft on such kinds as *Trifurca*, *Bealii*, and other rare Chinese kinds. The *Nepalensis* comes from cuttings of a leaf and one eye, like the Geraniums; hence the quantities for stocks.

The Bhootan *Rhododendrons*, which I mentioned last February as being quite new, and different from previous importations, are made into collections of nine or ten kinds, which have been purchased already by the leading firms here and on the Continent, and more than 100,000 of the seedling *Araucarias* went the same way—also the *Lapagerias*; and now it turns out that I was a right prophet. I said they ought to be "proved" first, as probably many kinds would appear among them. Since then, Mr. Bridges, who sent home the seeds, was in London, and he declared they were all daft for selling one of them for *Rosea*. The seeds he gathered 150 miles from where he had ever seen *Rosea*, and some few remaining flowers he had seen on the plants were of a deep crimson hue; but Mr. Low says it pays him best to give so many good chances to other men in the trade, for they buy up any new thing he imports. Mr. Bridges went off to Guatemala, and thence to California, to collect on his own account as Mr. Skinner does, and we shall probably, ere long, have Mr. Stevens hammering down in his rostrum the *Wellingtonias* as if they were Scotch or Silver Firs.

The great seed-bed of *Lilium giganteum* has thrown up the first year's supply as if in the open air. Three little scales form the one season's seedlings. The bed is still literally crammed with seeds, which are as sound as nuts.

I saw a large importation of *Orchids* from Java the week before, in which were several kinds which we could not make out, and lots of *Phalænopsis*, *Vandas*, and *Saccolabiums*. I never saw the Orchids look better here or so numerous, but they do not grow specimens of them. All the kinds they receive are cut up into good sizable trade plants, for which there is still a constant demand.

In the hardy department I counted 932 feet of cold pits for young *Heaths*. The pits are six feet wide inside, and take sixteen pots of large sixties or twenty-one small sixties in one row across the pit. A new pit of that size, six feet wide and 233 feet long, with nine-inch brickwork back and ends, two feet six inches high at back and one foot high in front, in four and a half inch brickwork; the glass sixteen ounces to the foot; the woodwork of the usual sizes and best description; the whole "finished complete," with three coats of paint, for £93! I counted twenty-two lights of the same size filled with stove *Heaths*, four tiny things in a sixty-pot; altogether, at a rough calculation, 22,000; and I was challenged to find one single dead tinywort in all the lot. These will be wintered on shelves in-doors; but all above that age and size will be wintered, as such were for the last few winters, in these long cold pits, without any means of heating them. *Tricolors*, *Masonii*, and all the most difficult *Heaths* to winter, do better in such pits than anywhere in-doors. One mat is put over the glass—the rest is stubble, fern, or straw, whichever can be got cheapest; just the way I used to winter 5000 young *Punch* Geraniums; but now Mr. Foggo has a span-roofed house for them, and a span-roofed house for every tribe of plants, as I shall describe shortly. Verily, gardening is an easy pastime now-a-days.

Of the old *Leschenaultia formosa* and its other kinds they grow 2000 here annually, and that is not more than is called for. Three kinds of *Cytisus* are equally in demand—*Racemosa fragrans*, which is, perhaps, the best; *Hybrida*, freer in growth and bloom, but not so strong or so bushy as *Racemosa*; and *Attleana*, which is very

near the old *Cytisus rhodophena*. Of these 3000 are consumed annually; but this season they will have to buy in at least another thousand.

I counted thirty-eight lights, same size, full of mixed greenhouse plants in small sixty-pots. These, having no rims, stand so close together that each light holds about 500 of them; multiply that by thirty-eight, and it makes 19,000 young plants, but they reckon on 20,000 in the whole. Twenty-five lights of fine dwarf, saleable plants of the different *Epacris*es, and 187 plants in each light, or 4675 plants of one uniform size, being about one-third of the whole stock, younger and older, or 15,000 *Epacris*es of different kinds, with 5000 hardy *Conifers* of sorts, and 2000 *Pinus palustris* from seeds. White *Glycine*, or *Wistaria Sinensis*, from eyes grafted on the roots of the old one, and come as freely as leaf and bud *Geranium* cuttings did in the Experimental. This led to a secret of great importance. The whole of the *Kennedys*, *Zichyas*, and such like, will graft on the roots of *Wistaria*, and grow to double the usual size as conservatory climbers. The continental mode of splitting the crown of the stock seems the easiest and best way for this root grafting also; but get one of the Catalonian *Jasmines* to learn the exact way. I begged that they should not be sold in lumps to the trade for one month, in order to give so many more the chance of learning how to practise the French mode of grafting *Geraniums* and all manner of plants.

A new hardy *Oak*, which came from the Alps of Bhootan with the aforesaid *Rhododendrons*, promises to be one of the finest for park scenery, being exactly intermediate between an *Oak* and a Spanish Chestnut in the leaves. Quantities of *Pinus filifolia*, one of the finest of the long-leaved kinds, but not quite hardy, therefore only fit for the Crystal Palace. *Pinus orientalis* looks much like a young spruce. *Chironia glutinosa* so covered with bloom that it ought to make a good bedder in peat to come in after the Scarlet *Crassulas*. *Chironia decussata*, one of the best of the good old greenhouse plants, I was told, is now all but lost everywhere. Can that be a true entry in the chronicles of the Experimental? *Chironia Fischerii* turns out to be an *alias* of *Floribunda*.

Among these substantial I noticed a good-looking stranger to my eye—some *Leptospermum*, no doubt, or one of the *Adenandras*. "Not very likely," said Mr. Low; "this is a plant which my son found high up on the Kenalalow Mountain, the highest we know of in Borneo; and, strange to say, it will not stand heat; but what it really is no one can tell."

Now to the *Camellia* and *Azalea* ground. They stand the *Camellias* in beds, with the highest plants in the middle row, and then fall down both ways as the roof of a house. The whole look like ridge-and-furrow, and comprise 7000 plants from one to four feet, all best kinds, and at from 21s. to 60s. per dozen. Three thousand Chinese *Azaleas* next to them, and the next all the *Pompones* and *Chrysanthemums*, just as I arranged them last year in THE COTTAGE GARDENER.

In "the bedding-out way" I found more than I can touch on to-day, and I must pass that branch for some thing else.

A *Weeping Birch*, the first of them in England, which I saw planted the week before the passing of the Emancipation Bill, in 1829, used to be crowded with "stocks" of common *Birch* to inarch on; but that practice is given up now, and one great branch of the tree is trained down to near the ground, and the young wood is layered, and thus *Weeping Birches* on their own roots are obtained at less bother, and far better for the planter. The original appeared first in the collection of M. Soulangue Bandin, of Paris, and the tree is about as great an ornament as any one could find in an Arboretum. When Prince Albert planted *Librocedrus Chilense* at

Shrubland Park the price was one guinea the inch. The best plant of it here now is about five feet high for the same price.
D. BEATON.

ORNAMENTAL PLANTING.

UNDER this head I mean to throw together a few ideas on the best way to plant such trees and shrubs as may be most conducive to give a pleasing effect in after years to the plantation. Ornamental plantations and shrubberies are generally placed on the borders of the carriage-drive, or surround the pleasure-ground and the flower-garden, or serve as belts to hide such objects as the farm-yard, the kitchen-garden, or, may be, a public road, or any other unsightly object. They also have been planted to separate the kept ground from the park and the ground appropriated for farming purposes. Such grounds and plantations should be so fenced in that hares and rabbits cannot break or creep through; but such fences should be so light as almost to be invisible at a certain distance.

The way in which such ornamental plantings have, in many cases, been managed or made is far from satisfactory. A certain breadth of ground is set out, and a certain number of trees and shrubs ordered from the nurseries. The land has, probably, been dug well enough, and the planting is commenced; an equal number of trees and shrubs selected; and the planter, accompanied by a gang of labourers, commences the operation by laying down the trees, &c. He lays down one of every kind till he has gone through the whole of the species he has to plant the entire space with. As soon as he has got through them he commences again with the first species the same as he began, goes through the whole over again, and so repeats the sets till all the ground is filled. Many hundreds of such plantations have I noticed in various parts of the country. This is called the mixed method, and the greater the number of species the planter can cram in the greater, as he thinks, is his ability displayed. Perhaps this mixture, as far as the varieties used extend, may reach twenty, thirty, or forty yards. It is evident the next length will be exactly similar, so that then the spectator need not seek any further for variety; the pattern is all the same to the end of the plantation. The proprietor wonders why his shrubberies give him so little pleasure; they are neglected, and become in a few years a tangled, unsightly thicket, without meaning or beauty.

How different would their appearance have been had they been judiciously grouped! The planting would then have been interesting at the first, and the interest would have increased every year. There would then have been great pleasure in pruning, thinning, and keeping the groups distinct enough to give the effect desired. By grouping I mean the placing together a number of trees or shrubs of one variety, so as to give breadth and depth to that one variety. Now, almost every species of tree has a distinct character, though some approach very near in appearance. The different forms, in general, are as follows:—Round-headed, which is the most common, such as the *Oak* and the *Lime*; oblong-headed, as the *Ash*; spiry-headed, as the *Fir*; and acute-topped, as the *Lombardy Poplar*. Now, if these are planted in groups of from three to a score, the skyline will be broken and beautifully diversified, and will give a decided character to the view even in a level country, but still more so on the summit of a hill; whereas, had they been planted in the mingled method, the effect would be tame and spiritless, and distressing to the eye of taste.

Just the same effect may be produced by planting shrubs in masses. Deciduous shrubs are almost out of

fashion now, and the reason arises, in a great measure, from their being planted in the mingled method. The mixing varieties of colour in flowers of shrubs may be allowed, as, for instance, the red, yellow, and white *Ribes*, because the form of their growth is similar. This grouping method is perfectly natural, and therefore, on that account, ought to be followed in imitating natural scenery. The outlines of each group may be as it were dovetailed into each other, that is, a single one of the neighbouring group may be as it were thrown into and amongst the adjoining group, thus taking away the formality and abrupt line of separation, softening its harshness without destroying the diversity of character in the sky-line.

The grouping I have endeavoured to describe refers to a continuous plantation or shrubbery. The grouping in park scenery or in the pleasure ground on the lawn are quite different objects. To them I will devote my attention in another paper.

T. APPLEBY.

(To be continued.)

THE CABBAGE AND ITS CULTURE.

As the public taste has of late been as much directed towards gaining information about common things as about those more novel or extraordinary, the first kitchen-garden article in the present volume of *THE COTTAGE GARDENER* cannot be better or more aptly employed than in describing the culture of one of the most useful products of all gardens, be it that of a prince or a peasant; and though it be amongst the most common of the common, there are possibly some points in connection with it not generally known to amateurs; so we devote the present chapter to the cultivation of *THE CABBAGE*.

HISTORY AND HABITATS.—Much obscurity hangs over the early history of this useful article; neither is it profitable to follow it out, as it will, most likely, be found that the present state of perfection to which it is brought has been the result of many long years of cultivation, the earliest of them, no doubt, much retarded for the want of that information on Vegetable Physiology which is now generally understood; and it is very likely the specimens which graced the table of our forefathers towards the close of the sixteenth century were poor objects compared to the well-grown ones of the present day; but, in one respect, they would be a grateful appendage to a table. The antiscorbutic properties of the plant exist as well in the wild specimen as in the garden one, and at that period was, no doubt, much sought after; in fact, if we could trace its origin backwards through the long string of improvements it has undergone, we might find that the valuable properties the yellow-flowering weed, the parent of the Cabbage, had in arresting that direful complaint, the scurvy, led to its culture. Of this it is needless to say more; but the natural situation the original parent of the cultivated species is found in may be of use in determining the character of soil best suited for its welfare. The wild, half-Rape, half-Charlock-looking plant, which claims the Cabbage tribe as its progeny is found growing in the greatest abundance on chalky cliffs near the sea-shore. The cliffs overhanging the town of Dover are, in some places, clad with it. In other places it is also found, but it seems to be more particularly fond of the sea-coast. Let us now glance at the varieties into which it has been divided, confining our attention to the Cabbage only, and omitting for the present the collateral varieties of Brocoli, Turnip, Cauliflower, &c.

VARIETIES.—There is no lack of these, but it is needless mentioning many here, for the largest garden requires no more than one kind in each section, and, as it

often happens, good varieties having only an existence in certain districts. Those mentioned here may not be known everywhere, but they can be had of most seedsmen.

1. CABBAGES FOR EARLY SPRING USE.—*Downhouse, Enfield Market, Eastham, and Fulham.* These are supposed to stand the winter, and come into use early in May; and, after being cut, they furnish sprouts for the whole summer, without running to seed the whole season. These partake more or less of the old *Early York*.

2. CABBAGES FOR THE SUMMER.—*Shilling's Queen, Adam's Matchless, Nonpareil, and Cattell's Reliance.* These are much larger than the above, though not so close and compact, the habit being more upright, resembling the old *Sugar-loaf* and *Van Neck* in appearance and growth. They are, however, less hardy than the first-named, and, consequently, ought not to be sown so soon; but they are greater favourites at table, and, consequently, one of the section ought to be grown.

3. CABBAGES FOR CATTLE.—This seems to lack variety; for though the names *Scotch, Drumhead, and Cattle* are all given as distinct varieties by some seedsmen, it is very doubtful if they have not all their origin in one bag.

4. CABBAGES FOR PARTICULAR PURPOSES.—The *Red Dutch*, or by what other name the best red one is called, is indispensable for pickling, and on certain occasions for table. It comes into use in the autumn, and generally lasts through the winter. There is another Cabbage not much used now, the ribs of the large leaves being the part that is cooked, in addition to the few central leaves that form a sort of loose heart. This is called the *Couve Tronchuda*, is rather tender, and but little grown; but it is certainly possible to improve it, and, if we could get this to furnish nice, delicate ribs or stalks of leaves resembling Sea-kale, it would be a great acquisition.

TIME OF SOWING.—The *first section*, or one of them, may be sown in a small quantity by the 20th of July in tolerably early situations; but in late ones a week sooner will be as well. Another sowing may take place towards the end of the month, or the first few days in August. The *second section* need not be sown before the 12th of August, unless in cold, late districts, where, as above, it may be sown sooner. Another sowing of this may be made as early in spring as the state of the ground will allow, choosing a well-sheltered spot for it, and, if young Cabbages be wanted all the summer, another sowing by the middle of May will be necessary; but, in a general way, the sprouts from the first cut ones form nice little heads for late summer use. *Section three* may be sown in August, same as last named, or, if under advantageous circumstances, the early part of spring will do as well, but generally August is best; and the same may be said of Red Cabbage in *section four*, which, however, will do well in most gardens if sown early in spring. The *Tronchuda* will do only when sown in spring, as it is an importation from a warmer climate than ours, Portugal, and therefore is ill-qualified to stand our winter; besides which, it is not required to grow so large as the Red and Cattle Cabbage, and, the time of its coming into use being about the same as they do, spring is always soon enough.

SOIL AND SITUATION.—For the seed-beds in dry situations and seasons the first or July sowing had better be made on a north border, or if in some open, sunny place, some artificial shading must be adopted until the seed germinates. A covering of boughs or netting propped from the ground will be of great service in preventing the sun baking the newly-watered earth, as the beds must be watered if it be very dry. Beds four feet wide, and the seed sown broad-cast, is the usual way; and after the plants are large enough to handle, they may be thinned

out, and the largest pricked out into beds prepared for them; about six inches apart will do. This pricking-out, however, is not required, except for those which have to stand the winter before finally planting out where they are to remain. The ground for this purpose, as well as for the beds, ought to be a rich loam, rather stiff than otherwise, and, as we have shown the Cabbage to be partial to a chalky soil, lime or chalk will be useful ingredients in its culture, while iron or irony matter will be distasteful. The spring sowing of such as it is desirable to hasten on ought to be made on the dry, sunny border of some wall or other warm place, taking care, as above, that the soil is good, as the Cabbage is a gross feeder.

FINAL PLANTING-OUT.—A good, rich, loamy soil that has been cultivated tolerably deep is necessary to produce this plant in perfection, and if it be not rich enough naturally, let some good dung be trenched in, and if the situation be a very dry one, manure-water ought to be given at times during the growing season. The distances apart may be two feet each way for the first section, and two and a half for the others. An open situation is indispensable for the main crop; but if the first plantation, *i.e.*, those that are sown in July, were accommodated with a warm border, they would sooner arrive at maturity. In planting out Cabbage it is a very good practice to draw drills with the hoe, same as for French Beans, and along these the plants may be inserted at the proper distances, taking care, in planting with the dibber, that the hole first made is completely filled up. It is proper here to observe, that very wet weather in autumn is not the best time to plant, as the ground becomes so soddened with the treading on as to be unfit for the plants' prosperity. Dry weather at such a time is, therefore, necessary, while in summer advantage must be taken of such showers as fall at the proper time to plant out the different crops, the precise time being regulated by the size of the seedling plants and other things; but should the weather be very dry, with little appearance of a change, it is better to plant out at once and water a few times than wait too long for rain. A dull day is best for planting. This is the time to water if it be required, and discontinue it, if possible, afterwards. The first crop will usually be ready to plant out the first week in September, and if so, do not delay it, as it is, after all, the one most valued.

EARTHING-UP AND GENERAL TREATMENT.—This is exceedingly simple, but it is, nevertheless, often neglected. The general earthing-up ought not to be done too early, but the ground may be stirred as often as possible in dry weather in winter; and, if dry winds loosen the plant at the neck, let it be fastened again. Sharp frosts often do this, so that it is necessary to look over late plantations after a thaw sets in, and secure the plants; and never allow the ground to get hard and baked over the roots at any time, as it prevents that due admission of air so necessary to fertility; and in earthing-up take care not to allow the ridge to assume a sharpened top, but a wide, half-closed one, and it is better not to do this until the plants are getting too large to allow the plain stirring of the surface any longer, and then earthing-up may be carefully done.

CUTTING THE CROP.—This is often carelessly done, and in some cases a wilful, but not an intentional, injury is caused by breaking the large leaves that ought to remain on. This ought not to be done, as the presence of as many of the leaves as possible is necessary to nurse the future crop of shoots. The size at which to cut the Cabbage will be determined by the wants and tastes of the family; but, in a general way, old, full-sized ones are not so much esteemed as those younger.

INSECTS AND CASUALTIES.—There is a great difficulty in securing the seedlings from the attacks of the turnip-

fly in some places; also, slugs and various other insects prey on them while just germinating. A good rich soil, to which some lime has been added, is a partial remedy, and a few dustings of soot, given as soon as they are expected to appear above-ground (not waiting to see a great quantity, as they may be almost gone then), is a good thing; but the slug is at all times a sad enemy to them. Next to that is a sort of weevil, which attacks them at the root, causing a kind of globular enlargement to take place. This, if observed at the time of planting, ought to be nipped off, and, in a general way, the plant recovers. It is very good practice to dust the injured part with hot lime, to cauterise it. But, perhaps, the worst enemy the Cabbage has to encounter is the caterpillar, which, in some places and seasons, renders the whole summer crop of shoots useless, by riddling them through and through. This pest is best kept down by the cottager, who sets his children to pick them off in the evenings, which is, however, a tedious operation for the large grower, and it is difficult to effect a cure on a large scale. Usually a thunder-storm thins them much; no doubt they are unable to endure the electricity the air is then charged with, otherwise no rain hurts them, as they have the means of securing themselves against that, as well as against sunshine, which they dislike the most. Then there is the surface-grub, the larva of a moth which eats through the stem of young plants just below the surface of the soil. Dipping the plants in a puddle of soot and lime checks these vermin; but, whenever a plant is destroyed, dig round it with a knife until the grub is found, and insert another plant.

J. ROBSON.

THE POTATO DISEASE.

MUCH has been said, from time to time, as to the Potato crops, some saying that the disease to which they have been of late years unfortunately so much subject is less prevalent this year than it has, in general, heretofore been, and others stating that it is even more severe than usual. I recollect that the *Brighton Gazette* said a short time since, the Potato Murrain was so bad in Sussex, that the stench of it had compelled some of the cottagers to abandon their dwellings; which I felt at the time, and still hope and trust, was devoid of truth, or, at any rate, a monstrous exaggeration. I should like to inform you of what I hear in this neighbourhood, and know myself, on the subject.

"I will a round unvarnished tale deliver,
Nor set down aught in malice."

Several people have informed me, and I have found it true in my own case, that the Potatoes dug in immediately after the very dry and warm weather we experienced in the early part of last month (August), and before any rain had fallen, were uniformly sound and good, but those dug after the rain were more or less diseased; in many cases, half or more bad. This, if it proves anything, shows that a wet season contributes to the calamity, which I am inclined to believe.

It has been remarked, too, and I found it true in my own case, that the disease did not, as it does in general, commence in the stalks, which, in several instances this year, showed no symptoms of disease, whilst the roots turned out to be strongly affected; and the early kinds, which have hitherto enjoyed the greatest immunity, were this year equally, if not more, affected than others.

Allow me, now I am on the subject of the Potato, to mention a remark made to me at the planting time, and I have heard it from more than one or two persons, who questioned the wisdom of my method of planting whole sets, and I shall be much obliged by your opinion on it. They say that it is a means of producing more in number in a root, but they are invariably small, whilst the plan of cutting the Potato down to one eye or two always produces the larger tubers. What say you?—T. M. W.

[We prefer planting whole tubers of medium size of every kind. From such sets we always have had the heaviest

crops and the finest tubers, and it is a method we have practised for the last twenty-six years. From cut sets we have seen blanks in the rows, either from the fresh-cut sets being planted, and these being devoured by slugs, or by carelessly-cut sets being so small, or put in without an eye at all. In the whole set system we never have had a blank in the row. It may be said that the cut sets should be cut some time before being planted, and dusted with quick-lime. This is all very well, and as it should be by those who have faith in cut sets, in preference to the whole middling-sized tubers; but such preference would cease if fairly tested by experiment. The way to experiment upon this matter is to choose a good, open plot of ground, and to plant one row of whole sets, and the next with carefully cut and dried sets, and so on through the whole plot, and to weigh the comparative produce. Some kinds do not require so much room to grow in as other kinds; thus, the *Walnut-leaved Kidney* may be planted eighteen inches from row to row, and nine or ten inches from set to set in the row; whilst the *York Regents* would be all the finer if planted two feet and a half from row to row, and fifteen inches from set to set in the row, whether the sets be cut or not cut. Of course, we are speaking of garden culture, where the soil is a rich and light loam.]

FRUIT-TREES IN POTS AT THE CRYSTAL PALACE SHOW.

A CONTEMPORARY editor reports that the collection of Peaches, &c., in pots "were well-fruited, large, and well-coloured;" our lion in THE COTTAGE GARDENER says—"the fruit in pots was as good as pot fruit can be expected at this season." For the information of my home brothers let me compare notes with the above. Mr. Forsyth's four pots of Grapes were formed, as before, into two arches; one arch had twelve middling-sized, bad-coloured bunches on it, and the other fourteen similar, which certainly did not deserve notice, as their culture would not have reflected any credit on a tailor, while those he exhibited at the last Show richly, as I said before, deserved all that was given them. Had I been in his place, methinks I would have wished Mr. Ewing's three superb black bunches of Grapes underneath them much further off. These were placed at the end of the tables of cut fruit, not having the honour of a place on the grand stand, in the centre transept, with the Peaches, &c. Taking the first tree in a pot nearest the cut fruit, I shall call it No. 1, which was a Peach, with one middling Peach on it. No. 2. Ditto. No. 3. Ditto. No. 4. Catherine Plum, twelve middling fruits, like Greengages. No. 5. Victoria Plum, six tied up, one down, good, five down, quite decayed (*what shifts!*). No. 6. Coe's Golden Drop Plum, two on, ten down (why not have a lesson from the flower-girls in Covent Garden, and learn to *gum them on?*). No. 7. Reine Claude Plum, seven, like Greengages. No. 8. Royal George Peach, fourteen on, one down; all small. No. 9. Impératrice Nectarine, seventeen small. No. 10. Millet's Mignonne Peach, nineteen on, two down; small. No. 11. Hunt's Tawny Nectarine, twelve tied up, two down; small. No. 12. Black Hamburgh, four middling bunches. No. 13. Violet Hâtive Nectarine, twelve not ripe; small. No. 14. Reine Claude Plum, sixteen good. No. 15. Acton Scott, twelve on, one down; small. No. 16. Red Magdalen, three; small. No. 17. Red Roman Nectarine, eighteen; small. No. 18. Stanwick Nectarine, eight pretty good for size, one down. No. 19. Apricot, twelve on, one down; miserable. No. 20. Peach, standard, nine. No. 21. Ditto, seventeen not ripe. No. 22. Ditto, eight middling. No. 23. Ditto, twelve not ripe. No. 24. Fig, none ripe. No. 25. Ditto, one ripe; Brown Turkey. No. 26. Fig, Brunswick, three quite opened and useless. one good. No. 27. Ditto, Grande Florentine, two passable. No. 28. Noblesse Peach, one tied up. No. 29. Early Admirable Peach, one good. No. 30. Violet Hâtive Nectarine, nine. No. 31. Morello Cherry; miserable. No. 32. Ditto; deplorable. No. 33. Ditto; wretched. No. 34. Ditto; lamentable. No. 35. Ditto; disgraceful. No. 36. Plum, Red, seven passable fruits.

The above is a true copy of what I took on the spot, and I have not the least hesitation in saying, as a whole, was but

a fair representation of what even the melancholy croakers could do in this way. Why does not the head of the croakers come forward and give us a better sample, which I know he can do, and hundreds of gardeners in the country besides? For, though I do not like to see a potted tree where a planted-out one ought to be, still I am of opinion there is not a garden in full action in the kingdom but what ought to have them, and, in fact, is not complete without them; nor ought they to be found in the garden of the aristocrat by the pair, but by the hundred.

Supposing two practicals of equal abilities were to enter at the same time on new situations with equal quantities of forcing-houses and healthy trees, to enable them to have crops to satisfy all reasonable expectations, with the exception that one of the two found two fine lots of trees in pots, say to the number of 150 in each lot; and suppose the time they took possession to be November, and that one lot of trees are ready for action, and the other well ripened, and on a north aspect, need I tell the professionals the advantage these potted trees give the one over the other for early and late supplies? Surely not; and where is the place where fruit as early and late as possible is demanded that room cannot be made for less or more of the above? We are all aware that Peach-trees will stand a high temperature, except when in flower and making their kernels; but where there is a whole house at stake, gardeners are obliged to be much more cautious than if there are only a few trees in pots, and, therefore, can afford the risk to get them earlier.

Peach-trees, &c., in pots, in my opinion, ought to be shifted annually, and the time soon after the fruit is gathered, making pretty free with reducing their roots, so that a good foundation of chopped turf and manure can be placed underneath them. They will then not require the mulching and watering with liquid-manure that are generally and so offensively practised; for it is only on the old system of plant-growing in pots where this liquid-manuring is required. In my opinion, also, it is a bad system to allow the roots of bearing trees to grow through the bottom of the pots into the ground, as it prevents you giving the whole of the tree a fair chance, particularly with lean-to houses. In houses with east and west aspects it is different. In cases where a whole house, such as Mr. Rivers' No. 2 Orchard-house, is given up to their growth, I should not pot them at all, but lift them annually as soon as the fruit is gathered, and treat them as if for potting; and in cases where there was only one house and a succession required, two-thirds could be placed out of doors and brought in as required. If this is practised it will save a deal of labour.—D. FERGUSON, *Stowe, Buckingham.*

THE HOUSEHOLD.

TO WATERPROOF A COAT.—Take three ounces of sugar of lead, six ounces of alum, and dissolve them in twelve quarts of boiling water, and stir the mixture well; allow the sediment to settle down, and pour off the clear liquid. Soak the garment forty-eight hours in it, and dry in the shade.

HOW TO MAKE NO-MATTERS.—This is an article of food which has for many years been confined to the descendants of a single family of this town. Its excellence will commend it to the attention of those housewives who wish to make a good display of culinary skill upon their table, at the same time having a due regard to economy. The lady who furnishes the recipe has given frequent opportunities of tasting their delicious flavour; and if any are inquisitive, perhaps she might be induced to inform them how the cakes obtained their homely name. To three teacupsful of butter-milk add three tablespoonsful of rich cream and a small quantity of sugar. Stir in flour until it is of a consistency of paste for dough-nuts. Roll out size of a large breakfast plate, and fry in lard to a rich brown colour. As each comes from the fire, cover with apple sauce made from tart apples sweetened to taste, and spiced with nutmeg or cinnamon, and continue the process till the plate is well heaped.

PINUS GRENVILLEÆ.

(LADY GRENVILLE'S PINE.)

FOUND by Mr. Hartweg on the Cerro de San Juan, or Saddle Mountain, near Tepic, in Mexico, attaining a height of sixty or eighty feet.

Leaves in fives, fourteen inches in length on the wild specimens, very robust, triquetrous, thickly set on the branches, dark green, and very much resembling those of *Pinus macrophylla*, but rather longer; sheaths persistent, nearly one inch and a half in length, rather rough and scaly; seed-leaves on the young plants mostly ten in number, and rather long; branches mostly solitary, rarely in pairs, irregular, and very robust; buds very large, imbricated, non-resinous, and thickly set with long narrow brown scales; cones pendulous, solitary, sessile, quite straight, tapering regularly from the base to the point, sixteen inches in length, and three and a half broad at the base, with from twenty-eight to thirty rows of scales; scales nearly all of a size, six-eighths of an inch broad, lightly elevated and blunt, particularly towards the base, from which a small portion of clear resin sometimes exudes; seeds about the ordinary size, with bifid wings, which are rather broad, and more than an inch in length.

This noble Pine is very easily distinguished from all others by its very long straight cones and stout foliage. It is called "Ocote macho," or male Pine, by the natives, on account of its robust habit, and is found plentifully on the highest parts of the Cerro de San Juan. It has had its present name given in compliment to the Right Hon. Lady Grenville, who possesses one of the finest Pinetums in Europe at Dropmore.—(*Horticultural Society's Journal*.)

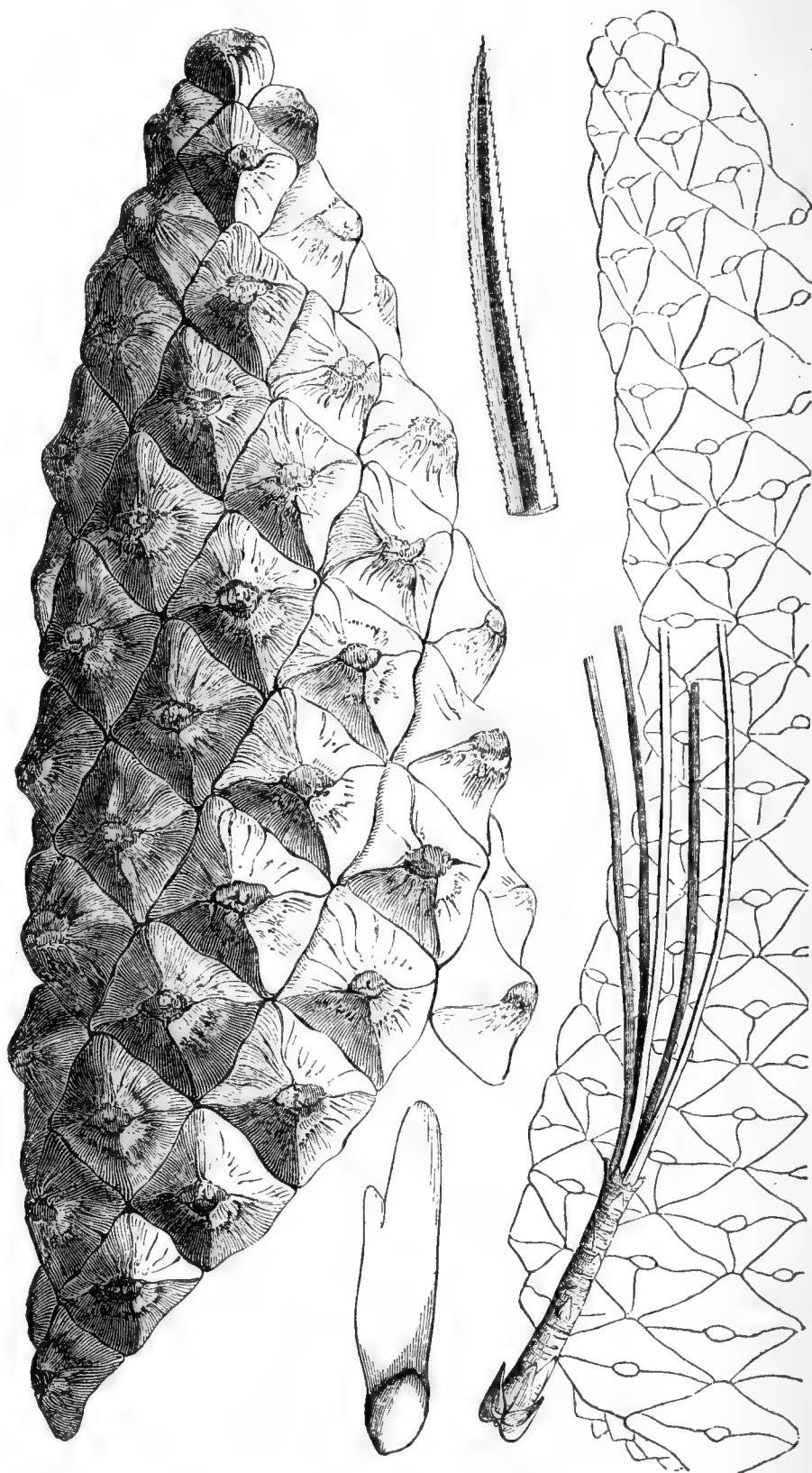
PETUNIA IMPERIAL.

ALLOW me to corroborate, as far as my experience goes, the statement of your correspondent "W.," to the effect that *Petunia Imperial* is not at all suitable as a bedding-plant. At least, in a flower-garden seen from where I now write, and consisting of upwards of 150 beds, two of them planted with this new *Petunia* are the nearest approach to a complete failure of any; and as to its much-vaunted scent, I have not yet been able to discover its superiority to the common single white varieties.

As a pot plant it is certainly useful; but as a breeder, I believe, it will be found to be exceedingly so; and I am very much pleased to hear that it has seeded, although I must admit that the inducing it to do so is a feat that I have not been able to accomplish. Still I have obtained seeds from several semi-double varieties fertilised by pollen obtained from the New Double White; so I think that we may confidently expect that in the course of a year or two double *Petunias* of all colours will be as common as double Dahlias; and this result will amply pay for a little disappointment respecting the first of the race.—ZEPHYRUS.

SALE OF PLANTS AT THE HORTICULTURAL SOCIETY'S GARDEN.

THIS was on the 24th of September, and conducted by Mr. J. C. Stevens, auctioneer, of King Street, Covent Garden.



Pinus Grenvilleæ.

There were 296 lots, and they were sold for £172 7s. The Hydrangeas, large, sold for ten shillings a dozen; the Heaths for a shilling each; Chrysanthemums fourteen shillings a dozen; Mesembryanthemums eightpence each; the Palm, *Maximiliana regia*, £1 3s.; *Theophrasta Jussieu*, £3 3s.; and *Theophrasta longifolia*, £2 6s. The *Paonia Moutans* fetched good prices, being mostly more than thirty shillings each. The highest prices for them were for *P. M. salmonea*, £3 5s.; *P. M.*, double purple, £3; *P. M. atro-sanguinea*, £5; *P. M. versicolor*, var., £5 10s.; and *P. M. atropurpurea*, var., £3 10s.

PINUS GORDONIANA.

(MR. GORDON'S PINE.)

RECEIVED from Mr. Hartweg, who found it on the Cerro de San Juan, or Saddle Mountain, near Tepic, in Mexico, attaining a height of sixty or eighty feet.

Leaves in fives, sixteen inches in length on the wild specimens, rather slender, triquetrous, very dense, light green, and longer than any of the other kinds; sheaths persistent, about one inch and a quarter in length, rather rough and scaly; seed-leaves on the young plants mostly seven in number, and rather short; branches rather numerous, regular, slightly elevated at the points, and not very robust; buds very scaly, non-resinous, and of a moderate size; male flowers rather large, in dense clusters, and very numerous; cones pendulous, mostly solitary, slightly curved, and tapering regularly from near the base to the point, from four to five inches in length, and one and a half broad near the base, with fourteen or fifteen rows of scales; scales half an inch broad, slightly elevated, particularly those about the middle and towards the points, while those next the base are nearly flat and much smaller; the cones are quite destitute of resin, and on footstalks about half an inch in length; seeds small, angular, with rather narrow wings, about one inch and a quarter in length.

This handsome Pine has the longest and finest foliage of any kind yet introduced, and is called by the natives "Ocote hembra," or female Pine. Mr. Hartweg, who discovered and named it in honour of Mr. Gordon, superintendent of the Horticultural Society's Garden, states that it is not frequently met with on the colder parts of the Cerro de San Juan, and is likely to be hardy.—(*Horticultural Society's Journal*.)

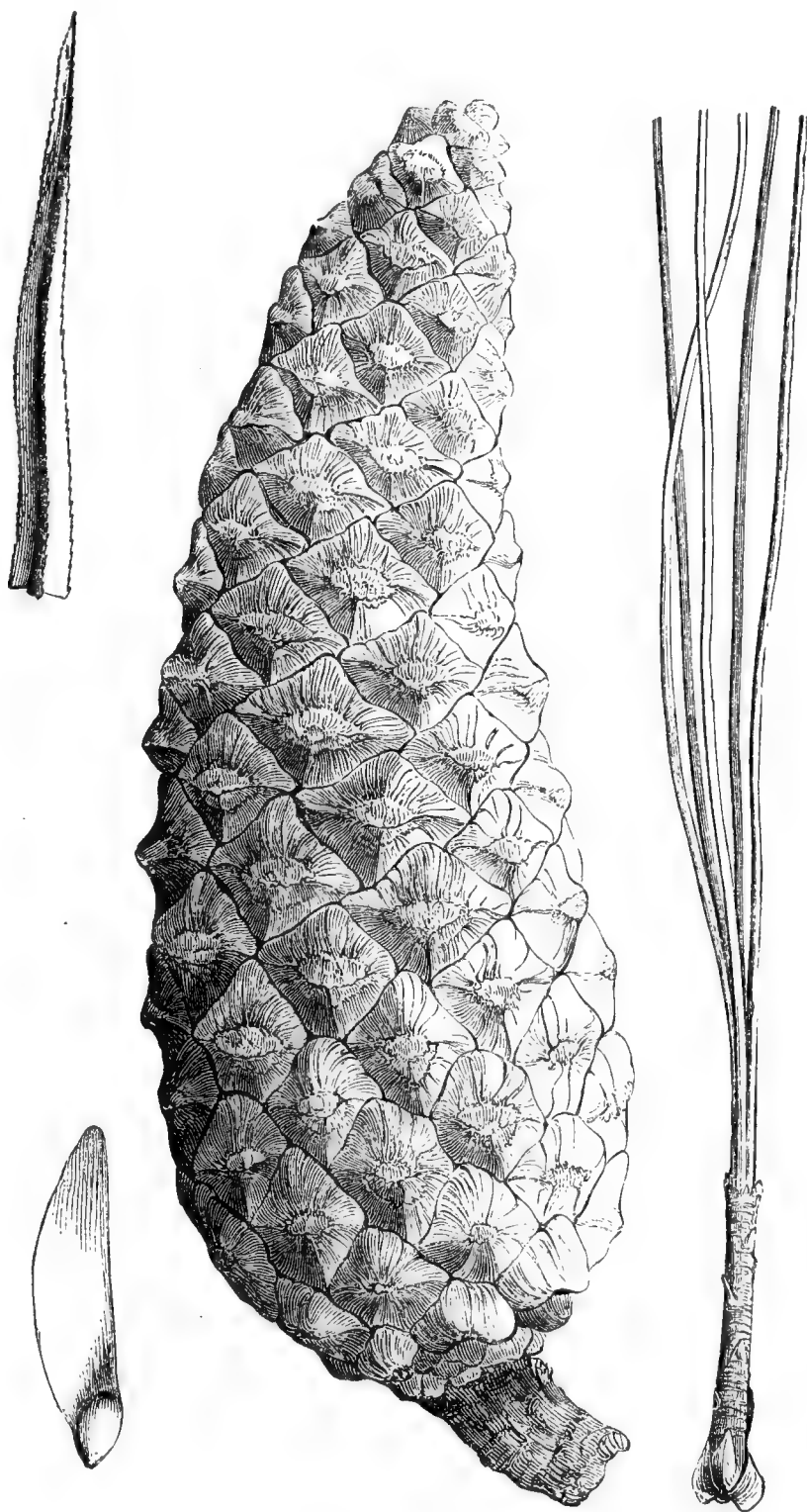
NOTES FROM PARIS.

At the Versailles Exhibition there was almost nothing in the way of what we call stove and greenhouse plants. Some fine young fruit-trees in pots were shown by M. Deseine, of Bougival. Many of these were loaded with fruit, but M. Deseine's object was evidently to show the manner of training the branches. The trees were chiefly Pears, and measured from six to ten feet high.

Pine-apples were shown by several persons. The sorts were Smooth-leaved Cayenne, Mont Serrat, and Trinity. M. Lebroy had a variety called *Comte de Paris*, not unlike the *Queen*. M. Boyer showed a good mixed collection, comprising Peaches, Grapes, Nectarines, Pears, and Apples. On the whole, I never saw so many Pine-apples at any Exhibition here; but those which I have noticed were of moderate weight, and only a limited number of them were quite ripe. In addition to the flowers and fruit there were two or three collections of vegetables, including Melons and Gourds. The Exhibition was also set off with a considerable number of the large Orange-trees belonging to the place, and with these were several standards of *Fiburnum tinus*, having heads fully five feet through.

I noticed, in a former communication, that the white Poplar was rare among the trees growing within the limits of the French capital, but I ought to observe that it is plentiful enough in the environs.

The island of St. Ouen, for instance, about a mile beyond the fortifications, is full of it; and, in addition to those which I cited as growing in Paris, there is one in a small private garden in the Rue St. Lazare, which attracts the



Pinus Gordoniana.

notice and admiration of everybody for its great height and breadth. It is, indeed, a magnificent tree.

Within the last eight or ten days several articles by M. Alfred Delvau on the Trees of Paris have appeared in one of the daily papers.

M. Delvau is somewhat abstruse and even rambling in his style; but the object of his observations appears to be to increase the number of trees and gardens in the capital, not only for embellishing the streets and houses, but, by purifying the atmosphere, to promote the health of the people. He states that the climate of Paris has been unfavourably modified since the destruction of the woods and forests which in former times surrounded the capital, forming, as it were, a *ceinture sanitaire*, by stopping the winds and absorbing the mists. He believes that the present inhabitants are thus deprived of the advantages which their ancestors enjoyed in this respect, and that, therefore, they are less energetic and robust than their fathers. But it is more than

probable that other causes have also abundantly contributed to such a state of things. It may, however, be admitted, according to the meteorological observations made at the *Observatoire* and elsewhere, that much more rain falls here now than used to fall in old times; but is it quite certain that the observations then were equally trustworthy and extensive? M. Delvau complains that the winters are long and disagreeable now. Spring exists only for memory, and, as for summer, it changes to autumn as soon as possible. All this, he maintains, according to the opinions of learned men, is owing to the destruction of the forests. He therefore proposes to reconstruct what has been destroyed, and restore to Paris its crown of wood and forest. "It will take a long time, but it can be done if we only begin at the beginning."

"Man," continues M. Delvau, "requires poetry and health to contrast with his physical and moral destitution. He lives better in the open air than in badly-ventilated houses. He lives longer in the country than in towns. Terrestrial magnetism acts more directly and more profitably on the peasant than on the citizen, because the latter walks on stone pavement, which is an isolator, whereas the peasant walks *with bare feet* on the *humus*, the earth, his mother and his nurse." But here M. Delvau seems to forget that modern Parisians walk on asphalt as much as on stone pavements, which are threatened with entire abolition.

In order to give the Parisians the health they would have if living twenty miles from the capital M. Delvau proposes to plant more trees about the houses, and lay out more gardens in the populous districts. He concludes the subject in the following strain:—

"Our public promenades, our quays, our boulevards, our squares, are, for the most part, planted with Elms and Limes, which are not sufficiently robust, and do not keep their leaves long enough. They are gloomy, sickly, and stunted—more like skeletons than trees. We do not know what trees would be best for replacing them, though we have seen the Plane-tree succeed wherever it has been planted. *Paulownia imperialis* thrives equally well, and the *Robinia* accommodates itself to any circumstance or position. The red Maple has been naturalised; and we confess, for our own part, we would not object to see some of the Normandy Apple-trees added to the list. Are trees which bear a profusion of fragrant flowers in spring, and abundance of ripe fruit in autumn, not better than those which only foster nests of cockchafers?"

Although it is not probable that M. Delvau's latter proposition will be entertained, it is quite true that the trees of Paris are not so large and luxuriant as they might be, but it is not owing altogether to the sorts which, with time and careful treatment, are certain to acquire much greater proportions. It would be easy to give a list of other varieties that might be added with advantage, and, perhaps, the small-leaved sorts of Elm, as well as Acacias, are too numerous. But improvement is the order of the day here, and, perhaps, the trees may obtain a little notice in their turn.

Another three days' Show is to be held at Fontainebleau, on the occasion of the general *fête* there. I shall, perhaps, be able to send you a short notice of it.

We have had fine autumn weather for some weeks, but the 24th was marked by high winds and rain, which continued without intermission for about eighteen hours. If the rain has been general the Vine crops may have been more or less damaged. Up to the present time there have been no serious complaints, and the markets have been abundantly supplied with dessert Grapes, well swelled and ripened, at sixpence or eightpence a pound.—P. F. KEIR.

CULTURE OF HOYA BELLA AND THE CANNON HALL MUSCAT GRAPE.

SEEING a few remarks in THE COTTAGE GARDENER, by Mr. Appleby, on the *Hoya bella* and *Cannon Hall Grape* grown by me at the garden of J. O. March, Esq., Beech Grove, Leeds, I offer a few remarks on the above.

Procure a plant of *Hoya Bidwilli* or of *H. carnosa*; inarch or graft a shoot of *H. bella* on either of the above

sorts. Since Mr. Appleby called on me I find that it unites as freely on *Carnosa* as on *Bidwilli*; but I should recommend one joint of the stock to be left above the place where the scion is put on, and if done, by inarching the same. If that precaution is not taken the end of the stock shrivels up before they unite. The union is completed in about five or six weeks. I worked one on the *Bidwilli* three years since this autumn. Last June it had above seventy heads of bloom open at one time. Its habit is like a well-grown *Fuchsia*, and the flowers seem equally as well. It is now three feet high.

The *Cannon Hall Grape* sets its fruit well with me. I have had some bunches this season set equally as well as the Black Hamburgh, and they took a great deal more thinning. What they want is a very strong, dry heat for eight or ten days when they are in bloom. I will give you an instance what a temperature they will endure. About five years ago I found a bunch of the *Cannon Hall Grape* within a few inches of the hot-water pipes set as thick as a *Frontignan*, and the other bunches were set as badly as could be.

The house is planted with *Cannon Hall* and *Muscat of Alexandria* Grapes, the *Cannon Hall* next the end where the pipes enter the house.

The year following observing that bunch, a day or two before they came into bloom, I lowered the Vines within twenty inches of the pipes, and let them remain eight or ten days. My master, who is a great connoisseur in Grapes, went into the house, and saw the Vines hung so near the pipes, and could not understand the meaning of it. I heard him say to some one near him, "Have you seen the gardener this morning?" So I came up, and he said, "John, what is the meaning of your Vines being so near the pipes? I think you are going to roast them." I explained the reason; the Vines were left as I had placed them, and the result was a good crop of well-set bunches, except on the top part of the Vine, which part I could not get near the pipes. We have had a flue built under the Vine, and towards the front it is within nine inches of the Vine; in fact, the fruit rests on the flue. Since it was built I have had no reason to lower the Vine.

To insure success, give a heat of 85° by day and 75° at night during the time the Vines are in bloom; have no moisture, and shade them sooner than give much air. After they are set the treatment is the same as for other *Muscats*. —JOHN ACOMB.

QUERIES AND ANSWERS.

GARDENING.

REPLIES TO BEGINNERS.

In order to save room, I will endeavour to condense a number of replies into these notes, hoping they may meet the case of some others besides the actual inquirers; and, to save time, I will just take them at random without any attempt at arrangement.

FUCHSIA SERRATIFOLIA PLANTED OUT.—"I cannot get them to bloom till late in October, and then they have to be put under shelter for fear of frost, so that, in fact, they are of no use whatever for a garden under the window of a drawing room."

[Exactly so. If you had read what was said of this plant lately, when the planting it out in summer was recommended, you would not at all have been disappointed. It is just as natural for this *Fuchsia* to bloom generally in winter as for most of the tribe to bloom in summer. Lose no time in lifting it carefully and repotting it in good loam, with a little leaf-mould; water it well, set it in a shady place, and syringe several times during the day, to prevent the leaves perspiring too much, and then place your plants in the greenhouse. Before your usual time of planting out in May and June prune your plant pretty well in, break the ball a little in planting, and put fresh soil round it, and, if attended to with watering in hot weather, you will have fine plants again to raise in September and pot for another winter.]

REFLEXED FUCHSIAS.—"Young plants of these are one foot high, and now in flower. Should they be kept dry in winter, like older *Fuchsias*, or regularly watered?"

[Neither; but a medium course should be adopted. Old Fuchsias that are to be kept healthy must not be quite dry, or the roots and wood too will shrivel. If at all in a damp place, or standing on a damp floor, they will require little water in winter, and frequently a slight syringing of the branches, to keep the wood plump, will be preferable to watering the roots. When it is convenient to do so, plunging the pots in a damp medium, as moss or rotten dung, will keep them in a better state than when the position they are in, from having the pots exposed, requires watering the roots frequently to prevent the soil being dusty dry. Now, these young plants, even taking the different sizes into consideration, have far less organisable matter stored up than these older plants; and, therefore, they must be watered so long as the flowers come and the foliage is healthy, diminishing in frequency and quantity as the nights get longer; and even when the leaves wither and fall off, these young plants should not be so dry as older ones may be, and, if possible, should have access to light, that an elaborating process may go on through the bark all the winter, and more especially if, though the plant be pruned in in spring, it is yet desirable to retain all the main stem it now possesses. If it is resolved upon to cut such plants down to the surface of the soil next spring, then the keeping of the plants in light, and not so dry, will be of less consequence after the leaves have fallen, as the lower part of the stem will be pretty well matured. Even in that case, however, the giving more attention to young plants will repay the extra trouble. In the case of old, well-established Fuchsias, they will keep well in any place in winter from which frost is excluded, be it dark or light; but if in the dark, the plants must be moved as soon as the buds break in spring.]

CHRYSANTHEMUMS PLANTED OUT.—"Our plants flagged very much last season when taken up; many leaves got yellow; and the flowers were smaller than when they were grown in pots. How can I avoid these this season?"

[As soon as the first buds appear on the points of the shoots the plants should be prepared for lifting, by loosening them with a fork all round, and giving them a good watering a few days before you commence lifting them and potting them. A four or five-tined light fork, such as those of Parkes', is the best instrument for lifting them. When potted, place them on the north side of a wall, or other fence, and even under an awning if there is much sun, and, after giving the pot a good watering, do not deluge them subsequently if the soil is moist enough, but keep the standing-ground moist, and lessen evaporation from the foliage by frequent syringings until the roots are working freely, and the balance between them and the leaves restored, when the plants should be gradually exposed to all the light they can get. When the flower-buds appear pretty thickly, and the pots are all right as respects their roots, manure-waterings may be frequently given. The plants should be got into the house, if possible, by the second or third week in October; if later, mildew will be apt to trouble the leaves.]

STOPPING CHRYSANTHEMUMS.—"My plants looked thin and leggy, and I stopped them all in the middle of August. Did I do right? I have plenty of shoots now, but they are not very strong."

[You took the best way to get more shoots, but the worst mode any one could have adopted to get good flowers, or even flowers of any sort; for I suspect very few will honour you with their presence. Disappointments are severe school-masters, but they are useful ones at times. I would advise repotting some of the old plants from the borders, of which you say you have abundance, as there is but little hope of your young bushy plants. As a general rule, never stop Chrysanthemum shoots after July.]

TEMPORARY HOTBEDS.—"I want to strike ever so many things,—Verbenas, Calceolarias, Geraniums, &c., for beds, and a clever gardener tells me that, after the end of September, they ought to have artificial heat, and I have nothing but a quantity of grass, a little stable dung, and some tree leaves more than half rotten; and he tells me that, before I get such rank material worked and made sweet, the season will be too far gone. Now, what am I to do?"

[You see what procrastination has done for you. You tell us that you read THE COTTAGE GARDENER constantly; and, if so, you would find that, with your hand-lights and frame or two, you had as much need for a hotbed as your favourite Cochon-China has for three legs. Your Geraniums might have been struck in the open border if put in in August. Your Verbenas would have rooted under a hand-light; and, though Calceolarias would not quarrel greatly with a very little artificial heat now, still they would do quite as well under a hand-light on the shady side of a hedge or fence. I have just put some in, and shall put in many more in a cold pit, on the north side of a fence, thus formed:—A bole of a tree forms the back; another smaller bole the front; and two other pieces the ends; and old sashes laid across, without rafters or anything else, form our roof. So, you see, we are never above reverting to the simplicities. Such a contrivance has an advantage and a disadvantage as compared with common hand-lights. In a very rainy autumn the sashes turn the rain on to the ground in front; whilst, in the case of hand-lights, the rain falling all round them makes the inside, at times, rather too damp, though Calceolarias will stand a great deal of moisture. The hand-lights keep the cuttings closer, on the other hand, than my old lights, and can be more easily regulated as respects air, &c., as the plants begin to grow. But all this is only tantalizing you about your hotbed. Well, on the whole, we agree with your adviser, the clever gardener; and while we shall always be glad to hear from you, we may frankly tell you, that if permitted to see his practical operations, you may gain more in a short time than you will be able to do from several of our articles, however plainly written. I hope, however, you will be benefited by both, as, without readers, we might seal up our inkstand; and, if that was no great loss to the community, it would be a great loss of pleasure to us. Well, as to the hotbed, if you waited until the material sweetened, it would be too late to try much with advantage, though the initiated will root cuttings at all times. The grass, if very short, will be like a blaze of tow—very hot at first, but soon over, as there is not fibre enough for continuous fuel. Long grass, say from six inches to a foot in length, will also heat violently and retain heat longer, but not long enough; while the steam and gases from both will destroy every growing vegetable confined within its influence. The long littery dung from the stable, from the fibre it contains, will regulate the heat, and, therefore, there will be no difficulty as to the heat for a month or so; the job is to get rid of the noxious steam, and yet not lose the time required for sweetening it by frequent turnings. Now, as a saving both of time and material, I often adopt the following plan for such temporary purposes—in fact, did so, the other day:—Throw the grass and littery dung into a heap, mixing it well. In two or three days it will have heated violently. Then mark out a place for your bed, wheel the mixture to it, and shake it regularly, patting it down with the fork. When you have got from a foot to fifteen inches deep mix, say other six inches, with rotten, decayed dung, or your half-rotted tree leaves. On this put other eight inches of the rotted tree leaves, set your frame on, and then place within it two or three inches of coal-ashes, or, if they are not handy, a sprinkling of dry earth or sand, or burnt clay, the latter being about the best thing for sucking up all noxious gases and steams. In this you may put your cuttings at once. It will soon give you a gentle heat, which will last for a month or so, and the top covering will keep down all noxious gases. A little air will require to be left at the back, especially at night. The bed I have thus spoken of may seem high for such a purpose, but, not being trampled, it will sink quickly, but equally. The chief thing is a sufficiency of sweet old material for the top covering. Earth itself would do; but then it would not keep the heat so long as half-rotten material, because, until thoroughly decomposed, it will of itself give out heat, when thus exposed to a fresh fermentation, until all the fibre is destroyed, or the air is denied access to carry on the process. —R. FISL.]

FERNS IN A CUCUMBER AND MELON-HOUSE.

"I am building a small house for the purpose of growing early Cucumbers and Melons in the summer; it is heated by six-inch pipes with tanks. Would you be so good as to

say in your next number whether the treatment required to grow Cucumbers and Melons will be suitable for exotic Ferns and Lycopods?—I.”

[The heat and moisture, especially in the Cucumber end, will be all right for the Ferns and Lycopods. In summer they must not be too much shaded. In the Melon end they will also do very well; but if the atmosphere is kept long dry for the Melons when ripening, it may be rather too dry for the Ferns; but a compromise may be made by keeping the soil about them moist, and the plants a little more shaded. Of course, if neither Cucumbers nor Melons are grown in winter, the Ferns, &c., must have the necessary heat.]

GROWING FRUIT FOR SALE.

“Can you encourage an amateur of very moderate means to indulge in the cultivation of the finer fruits, with any hope of realising expenses by the sale of produce? I allude to Grapes, Peaches, Figs, Strawberries, and perhaps Pines, forced and otherwise. I hear of salesmen at Manchester and Liverpool who would take all I sent, but entertain a fear that the demand for such things must be highly precarious. It would be mortifying to find a house of Peaches, forced Strawberries, or Grapes, unsaleable at some moderate price, such as would repay cost of production. Again, there seems a mystery about the packing of such things for a distant market, so as to reach with that bloom the loss of which would entirely spoil them. Where can the art be learnt, and where are the proper baskets, moss, paper, &c., to be procured? You see I am *hot* upon the subject. I know of nothing to me so full of pleasure as the careful cultivation of these beauties, and shall be loth to abandon the idea of extending operations on the score of prudence. I contemplate an expense of under £100 for a long range of orchard-house pits on Rivers' principle. I am favoured by the levels of my ground, and the existence already of a strong stone wall 150 feet long, and running east and west. I have nothing to do but to excavate *very dry* ground, and cover it with a glass roof. The heating apparatus will, perhaps, be the main expense.

“I have much theoretical and some practical knowledge of what I propose to undertake. I can grow fine Peaches on a south wall with most professional gardeners, but *under glass* have as yet attempted nothing.—A NEW SUBSCRIBER, near Wellingborough, Northamptonshire.”

[We think that the conveyance alone of fruit to a distant market would be a barrier to your speculation, and more especially as you are not quite conversant with details. The mode of packing, &c., you would learn sooner and better than we could tell you in much space by going and stating your wants to a respectable fruiterer. Grapes are taken safest firmly tied down in a box with nothing over them, and the lid free of them; the bunches thus do not move. Peaches are often conveyed safely in boxes, wrapped separately in paper, and packed in bran or chaff. For particular fruit we prefer having shallow boxes cut into squares, a hole for each fruit, the fruit placed in it after being enveloped in tissue paper, and packed then with wadding or dry, fine moss. Fine Strawberries we have packed separately in the same way, and they have gone great distances uninjured. Our general mode used to be to place them one layer deep in drawer-like boxes, with leaves above and below, and then several of these drawers fitted into one box. Those sent and exhibited in the windows in punnets are generally sent from short distances. We have no great reliance on fruiterers' advertisements as to taking all you can send. We have been told so, and then, when we had plenty, a note would come that the weather was so bad that there were no parties, and they could not sell at any price. Fruiterers often want great quantities of fine fruit, and it is of great importance to them to know where to lay their hands on it when wanted; and here the fruit grower within a few miles of the fruit mart has a great advantage over you. Suppose he has a house of Peaches or of Grapes coming in, he offers them to the best bidder, and they purchase the whole at so much, or at so much per dozen or per pound, and have it when they like, subject to all casualties.

There are, it is true, sellers on commission in Covent Garden, and, we presume, in large places like Liverpool,

who sell at what it will bring; but here, again, perishable things just bring prices according to their demand. When thus sold we can recollect, when the quoted price of Strawberries was about 2s. 6d. per ounce, getting about that money one day, getting 6d. a few days after, and a few days later, again, getting 2s.

Perhaps some of our coadjutors will be able to give better information. Meanwhile, we would take the liberty of advising you to state your case to Mr. Ferguson, of Stowe, who so often favours us with his ideas in these pages, as one having considerable experience with the fruit market, and one not so far distant from Wellingborough.]

HYBRID PERPETUAL GERANIUMS.

“Mr. Beaton would very much oblige very many persons in this neighbourhood by giving us a list of Hybrid Perpetual Geraniums, or Nosegay Geraniums, as he calls them.—JOHN GRANT.”

[Hybrid Perpetual Geraniums are greenhouse Geraniums, so called to distinguish them from the Fancies and from the Pelargoniums, which are only summer-flowering kinds, and there are long lists of them in every volume of THE COTTAGE GARDENER, beginning with *Lady Mary Fox* and ending with *Shrubland Pet.* Sir Joseph Paxton, knowing how fond ladies in great families are of this class of Geraniums for beds and mixed borders, or for forcing and cut flowers, offered prizes for them, in order to “improve them;” that is, improve them in growth, colour, and numbers, not by making circular flowers, for which ladies have no sympathy. He, the honourable member of Coventry, with equal zeal and good taste, wants to “improve” the Nosegay Geraniums, or the section of *Fothergillii*, for the ladies, who are more fond of them than of all other Geraniums put together; but Mr. Beaton intends to send us some notes about them.]

KILLING SORREL IN A LAWN.

“I took a new place, and found the lawn composed of pieces of turf taken from the road-side full of weeds, and smothered with Sorrel. It was taken up last autumn, and fresh mould and fresh turf laid down, in hopes of doing away with the Sorrel; but it has again appeared, and threatens to spread over the lawn as badly as ever. Our soil is very dry and light. Can you advise any means by which to get rid of the Sorrel?—AN OLD SUBSCRIBER.”

[When this lawn was unturfed last autumn, the dry bottom ought to have been trenched not less than eighteen inches deep; then the fresh soil, one inch deep, would have done laid on the top, and the new turf on the top of all. If the turf was from a common, we should pronounce the lawn one of the very best. As it is, no human power will get rid of that troublesome Sorrel without some such operation.]

CULTURE OF TRITONIA AUREA.

“Could you inform me how to treat *Tritonia aurea* after it has done blooming? For what price per packet can I get *Collinsia bicolor alba* seed, and where?—AN OLD SUBSCRIBER.”

[Treat the *Tritonia* just as you would a Tulip or a Hyacinth after flowering. Let it ripen the leaves slowly, and then go dry altogether, and rest for the winter. The bulbs will keep safer in the dry balls, but if you want the pots, the balls will do as well without them, and will keep anywhere, like Potatoes, and with the same protection from frost. In March or April break the balls, clean the bulbs, and plant them in *fresh* peat with a little loam to it. They will grow, at first, like *Ixias*, and will take but little water; after that, like the *Gladioluses*, they will require quantities of water and cold-frame culture. Confined air is death and destruction to them. *Collinsia bicolor alba* is to be had only from the seedsmen, who will, no doubt, advertise the price.]

TO CORRESPONDENTS.

NAMES OF FRUIT (*W. M'Gowan*).—All we can make out of your specimens of Apples are—21. *Lady's Finger*, and 26. *Munk's Codlin*. Of Pears, 61 and 71 are the *Hessle*. 63 is the *Red Magnum Bonum* Plum. Other questions next week.

RASPBERRIES (*A Subscriber*).—The *Fustolff Red*, and *Yellow Antwerp*, are the finest. You may obtain them of any nurseryman who advertises in our pages.

VARIOUS CORRESPONDENTS.—*C. M. X.* and others will find their questions answered in a previous part of our columns to-day.

EARLY PEAS (*John Evergreen*).—No variety is better than *Sangster's No. 1*, if you get it true; but we have seen strange mixtures sold for it. You do not say how they failed; were they parched up, or killed by frost? Neither do you say where your garden is. Is it in Devonshire or the Orkney Islands? The extract you mention is open to criticism; pray oblige us by your notes upon it.

FIGS (*Sulterton*).—You are most fortunate as to climate, and the produce you describe is extraordinary. Those who have battled against adverse circumstances, in more northern parts of the kingdom, might very possibly be astonished at your success, could they know and witness it. You speak about Figs—the questions you raise may not be settled in any jaunty way. We will shortly look into the Fig affair.

PLANTING CHINA ROSES, &c. (*A Young Gardener*).—Use only one kind of China Rose, the kind they edge the Rosary with at the Crystal Palace—*Indica major*, and Irish Ivy. Plant them and the Peaches and Nectarines in mild, open weather, any day in November. The sooner the better.

BULBS (*W. R.*).—Oblige us by turning to pages 273 and 274 of last volume, and substitute Stove for Vinery Bulbs. All the *Crinums* would so come in well in the stove, and, by cultivating a stock of *Hippeastrums* alone, you would scarcely ever be without bloom; but we will think the matter over.

GOLD FISH (*Z. Z. Z.*).—"I have a pond containing a lot of Gold Fish, and in the summer months they seemingly attack one another, and some have been found dead, and in many places the scales have been quite destroyed, and the fish die, whilst one or two have been bitten, or something like it, on the back large enough to put in a nutmeg. Those that have been attacked, not being bad, have been caught and put by themselves in another place. There are many young fish in the pond the size of minnows. Now, should those fish that have been separated be put back in the pond again?"

[We shall be glad of a reply to the above. Sow *Hemp* in April. There is no better mode of excluding *wusps* than by lace netting.]

LASTRÆA CRISTATA.—"In a late number of THE COTTAGE GARDENER 'W. B.' says Fritton is not in Norfolk. I beg to inform him he is wrong. The only place I have seen *Lastrea cristata* is on Fritton Common, about two miles from Foucett Station, on the Eastern Union Railroad. I have never seen it at the Fritton Mr. Bradley names.—*J. JUDGE, Gosport. P.S.*—There are several Ferns in that locality not known by me: will you be kind enough to name them?—*J. J.*"

[Yes, if you send us specimens.]

ORNAMENTAL WATER (*An Old Subscriber*).—Nothing is more difficult than to make a small piece of water ornamental; and we fear that no landscape gardener would undertake to suggest any arrangement unless he saw the place. We will see what can be done.

NAMES OF PLANTS (*A Young Gardener. T. B.*).—It is called *Tradescantia zebrina* and *Cyanotis vittata*. Native of Mexico, and with us is a trailing stove perennial. (*J. Kirkite*).—Yours is *Hypericum elodes*, or Marsh St. John's Wort. (*A Subscriber*).—Your "Pencilled Geranium" is *Geranium striatum*, or Streaked Geranium. (*T. T.*).—Your *Picea* and *Cupressus*, we think, are correctly named. (*T. Hill*).—Your plant is *Scutellaria galericulata*, common Skull-cap, or Hooded Willow Herb.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

COLLINGHAM, NEAR NEWARK. Oct. 21st. *Hon. Sec., E. Turton, Esq.,* South Collingham. Entries close Oct. 14th.
ESSEX. At Colchester, 8th, 9th, and 10th of January, 1857. *Secs., G. E. Attwood, and W. A. Warwick.*
GLOUCESTERSHIRE. Nov. 26th and 27th. *Sec., E. Trinder, Esq.,* Cirencester. Entries close Nov. 1st.
LEOMINSTER. Thursday, October 16.
NOTTINGHAMSHIRE. At Southwell, December 17th and 18th, 1856. *Sec., Richard Hawksley, jun.* Entries close November 19th.
NOTTINGHAM CENTRAL POULTRY ASSOCIATION. January 13, 14, and 15. *Hon. Sec. Frank Bottom. Secretary to the Canary Department, Jno. Hetherington, jun., Sneinton.*
N.B.—Secretaries will oblige us by sending early copies of their lists.

THE MICHAELMAS GOOSE.

"September, when by custom, right divine,
Geese are ordained to bleed at Michael's shrine."

BUT the custom is wearing out, for one who well knows the poultry market tells us that "this custom is falling off yearly, and Christmas is becoming the time of the best goose market." This is recurring nearer to the time when

our ancestors caroused over roasted goose, namely, on St. Martin's Day, November 11th; and Gooze tells the usual custom, when he wrote—

"To belly cheer, yet once again doth Martin more incline,
Whom all the people worshipeth with roasted goose and wine."

This is still the usual evil time for geese on the Continent.

Eating goose at Michaelmas, however, was also a very early custom in England, for as far back as the tenth year of the reign of Edward IV. (1471), John de la Haye was bound to render to William Barnaby, Lord of Lastres, in the county of Hereford, for a part of the demesne land, one goose fit for the Lord's dinner on the Feast of St. Michael the Archangel. This overturns the popular tradition that goose is eaten at this festival, because Queen Elizabeth was dining off this bird when she first heard of the destruction of the Spanish Armada, and set the fashion by annually dining off this bird on the anniversary of that day. This tradition, however, has still stronger refutation, for the public thanksgiving for the destruction of the Armada took place on the 20th of August!

GOLDEN-PENCILLED HAMBURGHES.

It does take some time, and trouble, and breedings, and defeats, and vexations, and observations, to arrive at a decent knowledge of what any of the Hamburgh class ought to be; they certainly have risen to a great point of perfection. When I first kept the Golden-spangled the spangled breast was not insisted on, and, indeed, rarely seen; but now how beautifully this essential is attended to; the Golden-pencilled too; mark the extreme regularity of the whole feathering. No arithmetical design can be more equidistant than the spots; it really is marvellous; and yet I do not know any class so uncertain in their reproductive qualities, and in the duration of their excellencies, for I have known the best birds after moulting actually worthless, and breed most miserable chickens; indeed, as a class, they are more uncertain of throwing good offspring than any of the other kinds of the Hamburgh breed.

In the Spangled variety the male bird certainly has the pre-eminence for beauty. In the Pencilled class, especially the Golden, the female has the palm, and to the latter I shall direct my observations, remarking on the cock merely that he should have the usual comb, face, ear-lobes, legs, and carriage of his class, with a good deep-red plumage, and the tail as bronzy as possible, with the sickle feathers well marked if you can.

The Golden-pencilled hen is a more difficult bird to judge than at first sight you are inclined to believe. She should be very gamey and delicate in her contour, close-feathered, shy, with light blue, clean, and lean legs; neck lean, long, and ending in a snaky head; the comb not a flabby, toppling, high-knobbed one, but a flat, square, compact, long-spiked one, with the eminences round and small; the ear-lobes, of course, white, and the face like a brandy drinker. The plumage is of a yellowish-golden-coloured brown, with bars of black running on either side across the feather. These when *in situ* are so arranged that they form a network of small square spots over the entire body, *i. e.*, from the shoulders and wings to the tip of the tail, and from the lower part of the throat, down over the breast and thighs, to the vent feathers. The hackle should be without spots of any kind, and of a clear, bright yellow colour. The chief points are three (I presume the comb, ear-lobes, legs, and general colour to be universally known):—First. The clear, bright hackle. Secondly. The pencils should be regular, especially over the saddle feathers and down the sides of the wings: here is generally a failure, the quill feathers being often not pencilled at all, giving an interruption to the spots in the shape of a black ledge. Thirdly. The tail should be spotted like the back, *i. e.*, the pencils should be continuous. I need not say that the breast and thighs should be of the same character as in all the variety, whether in Pencilled or Spangled. This is an essential. These remarks have been called forth by the solicitation of a friend, who, I presume, is in the predicament of many others—unable to find out the essentials of a good Golden-pencilled Hamburgh.—*W. H., Exeter.*

NORTHAMPTONSHIRE POULTRY SHOW.

SEPT. 25TH.

(From a Correspondent.)

THE Show here was extremely well attended; almost all the county families were present, and seemed much interested in the proceedings. It is hoped that next year many more may be persuaded to enter the lists. Indeed, the number of pens this year shows the interest is increasing, as there were double the number that were exhibited last year.

On the whole, for a county Show, the quality of the fowls was very superior. For *Dorkings*, Mr. Thursby, as usual, was very successful, but in Class 2 was beaten by a most extraordinary pen of birds, described as *thirteen weeks old*. They were in full plumage, and as large as others of *six months*. The *Cochins* were moderate, and do not seem favourites here. *Game fowls* very good indeed. Mr. Beasley's *Black Game* were universally admired, and the prize pen of Mr. Redgrave's were first-class birds, and would show well in the best company. There were very few *Hamburgs*, and these of an inferior description. In the class for "Any distinct breed" Lady Isham took the first prize with a pen of *old Spanish*; they were in bad order and deep moult. Mr. Thursby exhibited the best pen of *Brahma Pootra* chickens we have seen this year, but the Judge did not notice them. *Aylesbury Ducks* very middling. Other Ducks very good. Many thought Mr. Beasley's *Buenos Ayres* the best they had ever seen. The *Turkeys*, too, were well worthy of the praises bestowed upon them.

Mr. Joseph Jennens, Balsall Heath, Birmingham was the Judge.

COLOURED DORKINGS.—First, Rev. F. Thursby. Second, Mr. Eady, Lamport. *Chickens of 1856.*—First, Mr. Wood, Clapton. Second, Third, and Fourth, Rev. F. Thursby. (Very superior class.) *Cockerel and one Pullet.*—First, Rev. F. Thursby. Second, Mr. Franklin, Spratton. (Excellent class.) *Best Cock.*—First, Rev. F. Thursby. Second, Lady Isham.

COCHIN-CHINA (Any colour).—First, Mr. Tatham, Kingsthorpe. Second, Mr. Beasley, Brampton. *Chickens.*—First, Mr. Tatham, Kingsthorpe. (Second not awarded.)

GAME (Any colour).—First, Mr. Edmonds, Guilsborough. Second, Mr. Beasley. *Chickens.*—First, Mr. Redgrave, Boughton. Second, Mr. Beasley. Two extra prizes awarded. (Very good class.)

HAMBURGS (Pencilled).—First, Mr. Flesher, Northampton. Second, Mr. Rigby, Cold Ashby.

HAMBURGS (Spangled).—First, Rev. H. Burdett, Bugbrooke. Second, Mr. J. Love, Kingsthorpe.

ANY DISTINCT BREED.—First, Lady Isham. (Spanish.) Second, Mr. Clarke. (Bantams.)

CROSS BREED.—Second, Mr. Brown, Kingsthorpe. (First not awarded.)

AYLESBURY DUCKS.—First, Mr. Clarke, Northampton. Second, Dr. Prichard, Abington Abbey.

DUCKS (Any other breed).—First, Mr. Rigby. (Rouen.) Second and Third, Mr. Beasley. (Buenos Ayres.) (Excellent class.)

TURKEYS.—First, Mr. Beasley. Second, Lady Isham. Commended.—Mr. Sheffield, Geddington. (Very good class.)

with brown, or of a *brownish colour*, i.e., brownish black throughout? I have two young cockerels, one an intense gamey red all over, with an entire brown tail, and the breast completely mottled or spangled with blackish feathers, and a dark bar across the wings; the other the usual red colour, with spots below the hackle, &c., and the tail black, with a few lacings of brown on the sickle feathers. I want to know specifically about the tail. Is a tail ever found with sickle feathers like the hen?—H. N."

[The ground-colour of the tail of a Gold-pencilled Hamburg cock should be *black*. All the feathers should be edged with a rich, deep brown, but none should be entirely of that colour, except the ends of the tail-coverts. Hen-tailed cocks are found, but they are abominations. Keep the last-named of your two cocks. The spangled breast and barred wing are both wrong for Pencilled Hamburgs. They do not speak well for the breed.]

HEAD OF ROUEN DRAKES.—"I am at a loss to distinguish the right from the wrong in a brood of Rouen ducklings about three months old. I can readily distinguish the drakes from the ducks, but the former differ in the colouring of the heads, some being entirely green, with the white ring round the neck, while others have the head streaked, as it were, alternately with *green* and *white*. Now, pray inform me, please, which is the right, for I am sadly in the dark in this matter. The alternately streaked have not the white ring very clearly developed.—AMATEUR."

[Drakes only have green heads and white wings. The green stripes of which you speak are probably the beginnings of colour. Although ducks have darker feathers on the top of the head, they *never* have any green, nor do they have the white ring. We cannot understand the white on the head. All outside white feathers are defects in Rouen ducks. Birds having them should be got rid of.]

LONDON MARKETS.—OCTOBER 6TH.

COVENT GARDEN.

The supply of home-grown fruit keeps very limited, but the markets being dull prevent it being so sensibly felt as otherwise. Extensive consignments of *Pears* still meet with a ready sale from France, Belgium, and the Channel Islands, comprising nearly all the usual standard varieties. *Pines* are more plentiful. *Peaches* and *Nectarines* sufficient for the demand.

POULTRY.

There is still a good supply of poultry, and but a small demand for it.

Large Fowls 4s. 6d. to 5s. 6d. each.	Hares 3s. 0d. to 0s. 0d. each.
Smaller do 3s. 6d. to 4s. 0d. "	Ducks 2s. 9d. to 3s. 0d. "
Chickens .. 2s. 3d. to 2s. 9d. "	Geese 6s. 0d. to 7s. 6d. "
Grouse 4s. 0d. to 0s. 0d. "	Pigeons 8d. to 9d. "
Partridges.. 1s. 6d. to 1s. 9d. "	Rabbits 1s. 4d. to 1s. 5d. "
Pheasants.... 4s. 0d. to 0s. "	Wild ditto.... 10d. to 11d. "

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Advertisements.

Thirteenth Thousand.

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MAGIC AND MECHI, with a Portrait of
I. J. MECHE, Esq., of Tiptree. Which is the best Reaper? The Agricultural Philosopher's Stone; or, How to turn Beet-root to Gold. In No. 20 of the "FARMER'S CLUB," Agricultural Magazine. Sixpence, post free.

G. T. THOMASON, 10, Upper Thames Street; and GROOM-BRIDGE, Paternoster Row.

The First Volume of Lowe's BRITISH
AND EXOTIC FERNS will be published on the 15th of October, 1856, in Royal 8vo., Price 14s., containing Fifty Coloured Plates and numerous Wood Engravings.

London: GROOMBRIDGE & SONS, 5, Paternoster Row.

OUR LETTER BOX.

POINTS IN THE GOLDEN-PENCILLED COCK.—"Although a decent judge of a Golden-pencilled hen, I am very uncertain about the cock. Ought the tail to be of a black colour, with the sickle feathers laced

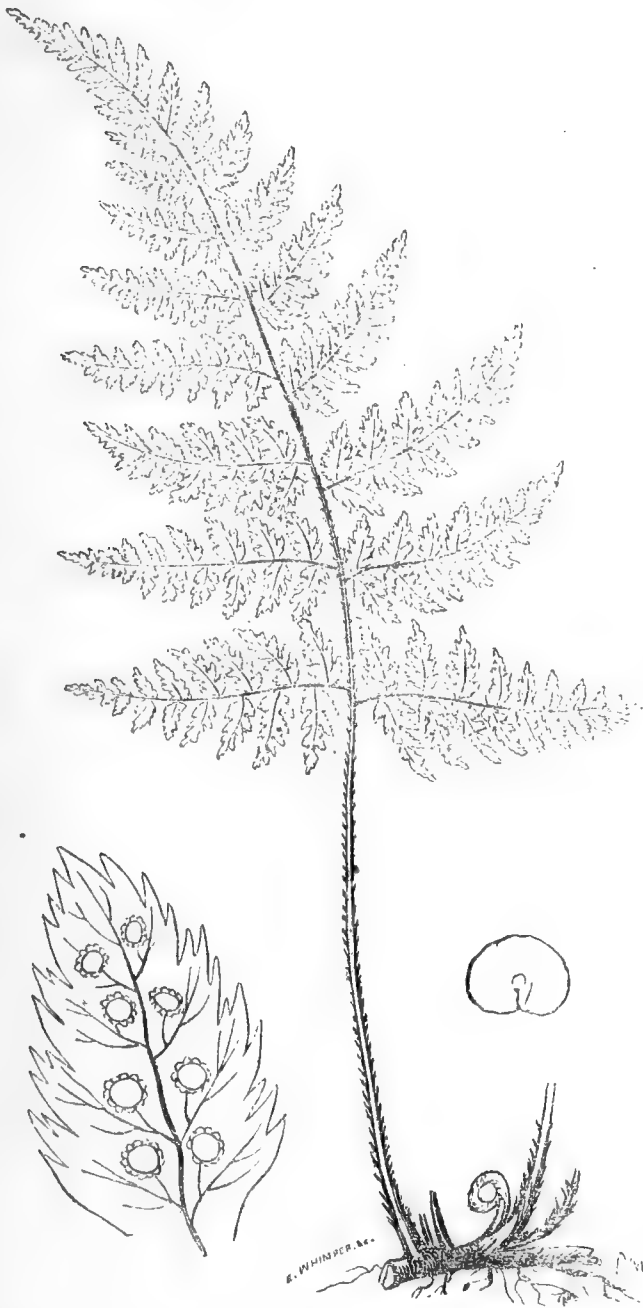
A Poultry Show recently took place at Clifton. One of the conditions upon which great poultry exhibitors compete at these Shows is, that all the eggs laid by their hens while in the pens shall be pricked, that others may not get possession, in an underhand way, of kinds which the owners prize so highly. A gentleman tried to seduce the sentry of the roost to give him some eggs, and the man, after consulting with the committee, accepted the bribe. Accordingly, the precious eggs were handed to the covetous person, and he sat them under some hens. After the hens had sat on the eggs an unusually long time, the ambitious amateur began to examine them, and, to his disgust, found that they were boiled.—(*Essex Gazette*.)

WEEKLY CALENDAR.

Day of Month.	Day of Week.	OCTOBER 14—20, 1856.	WEATHER NEAR LONDON IN 1855.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
14	TU	<i>Egeria crabroniformis.</i>	29.502—29.448	58—31	N.W.	.01	25 a 6	7 a 5	5 a 17	15	14 2	288
15	W	<i>Lithosa grammicus.</i>	29.597—29.412	59—32	S.	.09	26	5	5 35	16	14 15	289
16	TH	<i>Noctua exoleta.</i>	29.733—29.703	58—38	S.W.	.56	28	3	6 1	17	14 27	290
17	F	<i>Noctua lambda.</i>	29.811—29.705	60—38	N.E.	.10	30	1	6 38	18	14 39	291
18	S	ST. LUKE.	30.012—29.863	64—41	W.	.00	32	IV	7 30	19	14 51	292
19	SUN	22 SUNDAY AFTER TRINITY.	30.052—30.015	63—39	S.W.	.00	33	57	8 35	20	15 2	293
20	M	<i>Noctua seladonia.</i>	30.961—30.123	61—50	S.W.	.00	35	55	9 50	☾	15 12	294

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 58.3°, and 40.7°, respectively. The greatest heat, 76°, occurred on the 14th, in 1845; and the lowest cold, 22°, on the 20th, in 1842. During the period 106 days were fine, and on 90 rain fell.

LASTRÆA SPINULO'SA.



THIS is described by some botanists under the names of *Aspidium spinulosum*, *Lastrea dentata* var. *linearis*, *L. spinosa*, *Lophodium spinosum*, *Polypodium cristatum*, *P. filix-femina* var. *spinosa*, *P. dentatum*, *P. spinosum*, and *P. spinulosum*, and *Polystichum spinosum*. In English it is called the Narrow Prickly-toothed Fern, Prickly Shield Fern, Lesser Crested Polypody, and Prickly-toothed Shield Fern.

This species has been confounded with a variety of *Lastrea dilatata* by Sir J. E. Smith and others.

Root rather creeping, and although spreading slowly.

yet in old plants it reaches to a distance, and sends up numerous tufts of fronds. *Fronds* a delicate light green, varying from one to three feet high, very slightly leaning, having a long triangular general outline, and perfectly flat. The *stem* whitish, with a few black dots, through half its length without leaflets, and this unleafted part is beset with thin, semi-transparent, pale brown, oval scales, slightly pointed. *Leaflets* not crowded; *leaflets* numerous and deeply cut, spear-head shaped, all deeply toothed, each tooth ending in a sharp hooked point, and a branch of a lateral vein passing into each tooth. The lower leaflets on each leaflet are often larger than their corresponding upper leaflets. *Fructification* on the first inner branch of each lateral vein, forming a row of circular masses on each side the mid-vein. The masses are small; the cover of each flat, kidney-shaped, slightly waved on the edge, but never fringed with glands. In exposed situations the masses sometimes run together. The fructification is generally, but not always, upon the upper leaflets of the fronds only.

It is found in marshy places, moist wooded ground, and wet hedgerows.

In *England* it has been found in the Isle of Man; near Ingleborough, Pottery Car at Doncaster, and Richmond, in Yorkshire; Woolston Moss, in Lancashire; Newchurch Bog, in Cheshire; Titterstone Clee Hills, and Bomere Pool, in Shropshire; in Warwickshire; in Derbyshire; Dallington Heath, near Northampton; in Norfolk; near the Windmill and the Spring-well on Wimbledon Common; in Sussex; at Tunbridge, in Kent; near Torquay, and in a wood near Dunsford Bridge, in Devonshire.

In *Scotland* at Brahan Castle, near Dingwall. We are not sure about other localities where it has been said to be found.

Mr. Reeve observes to us, that although the *Lastrea spinulosa* may, at first sight, be mistaken for *L. dilatata*, yet, when each of them is cultivated in one collection, there will be found a marked difference. Neither of the species should be absent from a collection, for although a similarity exists, both the distinctness and beauty of each will be very apparent when growing near to each other.

This is a very fine and erect-growing species, and remarkably well adapted for the moist parts of the Fernery, rockery, or shady parts of the shrubbery, and, from its bold, free habit, should be largely cultivated.

It will bear a moderate degree of exposure, although, like most others of the genus, it prefers shade, attaining greater magnitude according to the degree of shade it is grown under; but, whichever situation it may occupy, a good supply of water will be necessary.

It is a Fern that will make itself at home under ordinary attention, and may be very confidently trusted to repay its cultivator with the expansion of its noble fronds for much less care and trouble than is necessary for many of the British Ferns. It is also a very nice-looking plant when cultivated in pots, which may be easily done. The principal points are, a good supply of water and good drainage, with allowance of space for the roots as the plant increases in size. A compost of equal parts loam and peat, with an admixture of sand sufficient to keep the soil open, will meet its wishes in any situation. Let it be potted rather firmly, but not hardly. The propagation is as directed for former species, by division or by its fructification.

NATURAL HISTORY OF THE RANUNCULACEÆ.

(Continued from page 2.)

THE ANEMONEÆ possess very nearly the same properties as the Ranunculeæ. *A. pulsatilla*, and, indeed, all the other species of Anemone, are extremely acrid in all their parts. It causes, when applied externally or introduced into the stomach, all the effects of acrid and corrosive substances, as violent inflammation, and a stupefying action on the nervous system. It furnishes a popular medicine among the homœopaths under the name of *Pulsatilla*; and the distilled water causes vomiting. The juice of the petals stains paper a green colour. *A. pratensis* when chewed corrodes the tongue, and is also said to contain a camphoraceous matter, which is obtained in the form of crystals, very acrid and very inflammable. The *Hepatica* is considered simply as an astringent. The roots of *Thalictrum flavum* dye wool yellow; the leaves raise blisters on the skin; and in Buckinghamshire the peasantry boil the root and tops in ale, which being drunk acts as a strong purgative. The roots of *Hydrastes Canadensis* are intensely bitter, and said to possess tonic qualities; and they yield a beautiful dye, whence the plant is called by the Canadians *Yellow Root*. *Knowltonia vesicatoria* is remarkable for its blistering properties.

Of the RANUNCULÆ, *R. bulbosus*, *acris*, *sceleratus*, *flammula*, *auricomus*, *thora*, *arvensis*, and many others, have very powerful acrid properties; and their fruits, when green, appear to be the parts in which this acidity is most intense. If the fresh-bruised leaves are applied to any part of the body a more or less active inflammation will soon appear, followed with hard swellings, which will speedily become a true blister. Recourse may, therefore, be had to these plants, as is the case in Norway and the Highlands of Scotland, when Cantharides cannot be obtained, or when the irritant action of these on tender parts would be injurious. Taken internally, the juice or extract of *R. acris* causes a very intense inflammation of the digestive organs, and if the dose has been considerable, it is a true acrid poison, followed by very serious results, and even death. The juice of *R. bulbosus* applied to the nostrils causes sneezing, and a portion of the root has been found to act beneficially on the gum of an aching tooth. Haller informs us that the Swiss hunters chew *R. alpestris* as a restorative after fatigue, and as an antidote to giddiness; and Withering states that in the case of poison having

been taken, *R. flammula*, which produces instantaneous vomiting, is preferable to any medicine. With the juice of *R. thora* the Swiss hunters were wont, formerly, to poison their darts, by means of which the wounds inflicted on wild beasts were speedily fatal and incurable. The distilled water of *R. sceleratus* is eminently acrid, and, when cold, deposits crystals which have been found to be utterly insoluble, and of an inflammable nature; yet, notwithstanding its poisonous properties, it is eaten when cooked by the shepherds of Wallachia. *R. aquatilis* forms an exception to all those just mentioned, having been found to be not only innoxious, but nutritious to cattle. Dr. Pulteney says that in the neighbourhood of Kingswood, on the borders of the Avon, cottagers support their cattle almost entirely on this plant. They collect a quantity every morning, and bring it in a boat to the edge of the water, where the cows eat it with great avidity. One man kept four cows and one horse so much upon it that they had not consumed more than half a ton of hay throughout the whole year. There is no doubt that the continued immersion in the water is the cause, as we have already stated, of the destruction of the acrid principle in this plant. *Ficaria ranunculoides* is also less acrid than some of the others; but although, as we have said, its leaves are used as a potherb when cooked, yet its roots are acrid and bitter, and have been recommended as a cure for piles.

Of the whole family the HELLEBOREÆ appear to possess the most powerfully poisonous properties. In all its parts, but particularly in its leaves and roots, the *Aconitum napellus*, or Common Monkshood, is found extremely acrid. Placed in contact with the tongue any portion of them excites a painful feeling of smarting, and a very considerable secretion in the salivary glands. The great number of accidents caused by the careless use of the root of Monkshood sufficiently indicate its deleterious action; and M. Orfila, after a great number of experiments, came to the conclusion, that the juice of the leaves introduced into the stomach, the rectum, or the cellular tissue, caused serious injury, followed by speedy death. The root acts with still greater effect. The aqueous extract prepared with the expressed juice of fresh leaves, and particularly the alcoholic extract, acted with the same poisonous properties. These different preparations are absorbed, act on the nervous system, and in particular on the brain, causing a sort of mental alienation, besides inducing a local irritation in the organs to which they have been applied. Instances are known where persons having taken the effluvia of the plant in full flower by the nostrils have been seized with swooning fits, and have lost their sight for three or four days. In Sweden a decoction or powder of the root of *A. lycoctonum* is used for destroying flies and other insects; and in Medelpadia Linnæus says the roots are eaten without injury. The acrid principle which is found in the Monkshoods was discovered by M. Brandes to be an alkali, which has been named *Aconitina* or *Aconitine*. In the hands of the skilful practitioner Aconitine has been advantageously employed, administered internally, in chronic rheumatism, gout, exostosis, paralysis, amaurosis, scrofula, cancer, intermittents, venereal nodes, and itch. The juice of *Caltha palustris*, or Marsh Marigold, boiled with alum, stains paper yellow; and Boerhaave says, that if kine eat the plant it occasions such an inflammation that they generally die. In some parts of Germany the young buds are pickled, and sold as capers. Withering states, in support of the opinion that gaseous exhalations from plants during night are often fatally mephitic, that on a large quantity of the flower of Marsh Marigold being put into the bedroom of a girl who had been subject to fits, the fits ceased. The root of *C. Bisma* is truly poisonous, and is used by the inhabitants of Nepaul, near the river Kosi, to poison their darts; and they regard it

as their most powerful means of repelling the invasions of their enemies, by the facilities with which they can poison water with it. *C. Codua* is even more poisonous than the last, and is used by the same people (the Corkhalese) for the same purpose. In Sweden the country-people strew their floors and pavements on holidays with the flowers of *Trollius Europæus*, which have a pleasant smell, as do also those of Westmoreland and some parts of Scotland, where they go out in parties to gather them for the decoration, not only of their doors and apartments, but also for garlands to decorate their persons. According to Kalm a decoction of the whole plant is said to cure scrofula. *Helleborus niger*, Black Hellebore, or Christmas Rose, is one of the most powerful drastic purgatives, the use of which may be followed by very serious results; but in smaller doses it is diuretic and emmenagogue, and by some considered as an alterative. It has been much recommended in mania, melancholy, dropsy, scabies, and worms; and when taken in too large doses it causes violent vomitings, inflammation of the stomach, vertigo, tremblings, convulsions, cramps, and death. *H. fætidus*, a native of England, though of less powerful properties than the Black Hellebore, is violently cathartic. The leaves, when dried, are a popular remedy against worms; but great caution is necessary in the administration, as instances of fatal effects have been recorded. The root of *Coptis trifolia* affords an agreeable and powerful stomachic bitter, and is much used in America as a cure for thrush in the mouths of children. The leaves and stalks are used by the Indians to dye of a fine yellow colour several kinds of work made of skins; and with them the French also dye wools of a yellow colour. The seeds of *Nigella sativa* have a piquant and acrid flavour, somewhat analogous to that of pepper; and they are used in Germany and Asia as a spice for seasoning dishes. The species of *Aquilegia*, or Columbines, though not possessing the same virulent properties of those already mentioned, still belong to the same family, and are to be regarded with suspicion. A tincture of the flowers of *A. vulgaris* has been recommended as antiphlogistic, for strengthening the gums, and for scorbutic ulcers in the mouth; but Linnæus states that, given internally, he has known children lose their lives by an over-dose of it. From the seeds of *Delphinium staphisagria* an alkaloid substance, called *Delphine*, is extracted, which exerts violent poisonous properties in very small doses, acting chiefly on the nervous system. The seeds of the plant are so violently emetic and cathartic as never to be administered internally, but are principally applied to some kinds of cutaneous eruptions, and in powder for destroying the pediculi of the head.

The PEONIEÆ are the least dangerous of this remarkable family; but even some of them must be used with caution. The berries of *Actæa spicata* are poisonous, and the root astringent. The juice of the berries mixed with alum furnishes a black dye, and the root has been found useful in some nervous affections. *Botrophis actæoides* (*A. ramosa*) is simply astringent, and the root is considered by the Americans as an antidote to poison and to the bite of the rattlesnake. The wood and bark of *Xanthorrhiza apifolia* furnish an excellent tonic bitter. The roots of *Pæonia officinalis*, when fresh, have a strong and nauseous smell, which they partly lose when dried. Among the ancients they were highly praised as most powerful antispasmodics, and as one of the most efficacious remedies against epilepsy, convulsion, and hysteria; but they are now totally disregarded for medical properties.

STUD HOUSE, HAMPTON COURT.

I HAVE so many subjects in hand just now, that I am forced to "give a turn" to each, without finishing any one of them, or taking time to gather my own impressions from the different quarters for a grand field-day. If "some power the gift would give" me to show you the Stud House as others have seen it in the time of the Georges, I have sufficient nerve yet left me for the task: it is better as it is, however. It is now in the occupation of a highland *mhonar*, or great lord, the Lord Chamberlain of Her Majesty's Household, the Marquis of Breadalbane; but they spell the subject of his title wrong in these latter days—it should be Braed-Albin, or Broad Scotland; but no matter, the Scottish clans are birds of a feather everywhere, and that compelled me to hurry off from Shrubland Park the other day to keep an engagement at the Stud House, about matters of state affairs, of course. I never was there before.

The "park" at Hampton Court was first laid out, like the garden, in the Dutch style, and there are still long avenues with double-planted rows of trees on each side, radiating off from the front of the palace like a pair of tongs with more legs than a pair, with level green sward between them. A few scores of highland "sturks," *alias* Scotch bullocks, and some hundreds of fallow deer, graze here at ease and comfort, and shade and shelter themselves in the avenues. Half-way down, and in the centre, between two rows of these avenues, stands the Stud House establishment, within a ring fence, nearly of the ring shape, and comprising about a dozen or fifteen acres in the whole, five of which are occupied by the kitchen-garden; the rest are not what they once were, or are likely to be again.

During the last two reigns, the trees, shrubs, and other things here were allowed to grow more after the "natural system" than by the rules and stint of gardeners; and this "natural order" of things extended beyond fifteen years of the present reign, or until my Lord Breadalbane came into possession, in virtue of his high office, down at Taymouth Castle and up above the household. Before his Lordship's day the Master of the Horse had this house and grounds with his office from the government of the day, who very probably paid a good round sum for keeping the gardens on the natural system; but they have been proving a very different system at Kew ever since 1840, which turns out so well already, that the Marquis of Breadalbane takes a leaf out of their books there, and hands it over to Mr. Veitch, who, in his turn, puts it into the hands of Mr. Kidd, formerly gardener to the late Colonial Secretary, Sir W. Molesworth. Mr. Kidd is well known among his fellows as a first-class man, and from among them all I never heard a breath against him farther than that he never would marry; but I can testify, from what I saw here, that he has enough before him for the next two years to think of nothing else.

As long, however, as a place is going under revision, it is a point of honour among gardeners not to say much about it. Mr. Kidd has had more experience of that kind of work which is needed here than most of us who are old enough to be his father. He is the only man in the kingdom who has ever grown the *Fuchsia spectabilis* above ten feet high, and flowered it equally well; while exhibition men could hardly keep a leaf on it, and never brought it up in their collections. He is, also, the only man who has surprised the writer for the last twenty years. I have seen many wonderful sights in the time, it is true; but I thought I could never be taken by surprise in the gardening way; yet such is the case, most certainly and unreservedly. For the first time in my experience I began to have misgivings about people believing my report; but after a good deal

of soft-soldering, and "auld lang syne" reminiscences, I got Mr. Kidd into the humour to write out the tale himself, to save my credit and the consciences of those who might be tempted to doubt the facts, which are all about Love-Apples, or Tomatoes. Strange things for me to write about; but I never knew a man who could grow them better than I did except Mr. Kidd. The border on which he grows them was, this time last year, as old as the dome of St. Paul's. It is about 400 feet long, and mostly level from end to end, under the south wall, or rather, south aspect wall of the old kitchen-garden. The wall is as old as the border last year. It is now planted again with young trees of the best dessert fruit; between the trees are Tomato plants in the usual way, and not more than from thirty inches to three feet high, loaded with dead ripe fruit on the 1st of September. Then there were fine rows of Tomatoes along the whole length of the 400 feet, making six rows in all. The fruit on the back row on the border was very nearly as early as that on the row against the wall; but for the rest there was little difference between one row and another. The plants were all planted one yard apart, and each plant had a stake not a yard long to tie it to, but I could see that few of the plants were tied. Mr. Kidd told me that he seldom used stakes to them, and would never do so again on this border; the rest he tells better himself, and here are his notes:—

CULTIVATION OF THE TOMATO ON OPEN BORDERS.

For many years it has been my practice to grow the Tomato on open borders, without any wall or protection whatever. My method simply is—I sow the seed about the 1st of May, put the seedlings singly into small pots, and then place them in heat, and grow them quickly. I endeavour to have them hardened off by the end of the month. By this time I have my ground well prepared with plenty of rich manure. They are then planted in rows three feet apart, a piece of stick is placed in the ground to support each plant, and this is all the tying they get. The planting-out being completed, I have the whole surface of the ground covered with litter, fern, or anything that can be got to suit that purpose. The next point to be observed is, when the first flower appears, the plant must be stopped with finger and thumb, which will cause the lower shoots to push rapidly. Four, five, or six branches are selected to lay on the ground all round the plant, and each branch is stopped in the same way as the first. This is all that is required to attain good success.

I have a border at the present time 420 feet long, containing 480 plants, from which I have been cutting ripe Tomatoes since the 1st of August, and still could cut barrowful at the present time. It will be at once seen that the whole principle of this system of growing is in the early application of the finger and thumb. Many may suppose that my situation and climate are more favourable than theirs; but I have grown Tomatoes in Herefordshire and other counties in the same way, when my neighbour gardeners could not ripen them on the walls.

This finger-and-thumb system does not only apply to Tomatoes, but everything else, more particularly to fruit-trees in a young state. I have proved, over and over again, that maiden trees in the nursery could all be trained trees the first year, instead of that barbarous old system of heading down, which is the first death-stroke to every tree, particularly exotic kinds. I shall have something to say about this at another time; in fact, the prettiest tree that ever I have seen was a *Winter Nelis* Pear, trained by the Fitches, of Fulham, without ever having a knife upon it, and it was preserved by them to the gentleman I then lived with.

Take, for instance, the following remark:—Eighteen or twenty years ago, when I was a pupil under Mr. Knight, of the Exotic Nursery, Chelsea, as he was passing by me one day while I was in the act of cutting down some tall *Acacias*, he came up to me, and asked me if he were to cut off the point of my finger, or take off my arm altogether, which would I feel most? I replied, "The arm." "Yes," he said, "and so does the plant. Had you taken out the point at the proper time with your finger and thumb it would have

prevented the great wound which you have now made." This I never have forgotten, nor shall I ever neglect the suggestion.—D. H. KIDD.

This fruit-tree practice which Mr. Kidd adopts was first mentioned in our books by one of Loudon's correspondents in the *Gardener's Magazine* about 1830. I wrote in favour of it more than once, and against the barbarous practice of "cutting in" maiden trees, more especially the stone-fruit bearers.

There are two small conservatories attached to the Stud House. The roof of one of them is like an umbrella, with the same shaped basin below, and stages all round the sides. One of the green Wattle *Mimosas* of the Australian settlers (*Acacia affinis*) is trained under the ribs of the umbrella like a climber, and thus gives the best practical illustration I have seen of how *Acacias*, in general, ought to be hard pruned in every year after the flowering is over. They all flower on the growth of the previous season; therefore, when they come to the size you require, the best way is to prune them like spur pruning a Vine, or like this green Wattle by Mr. Kidd. Lots of recently-bought specimens of *Azaleas*, *Camellias*, *Heaths*, *Epacrises*, and other kinds stood out about the doors, and the inside was well stocked with summer flowers.

Against the back wall of the other house stands a very large specimen of a Scarlet Geranium, as old, perhaps, as the days of George III., and as vigorous now as ever it was, and as full of blossoms. The short-sightedness of throwing away old Scarlet Geraniums since the bedding-out came into general fashion is now severely felt in most places. Sir W. Middleton told me but the other day that he would not rest satisfied till his specimen terrace for them was planted with such plants as those at Fulham Palace, which, I am told, are now from twelve to eighteen feet high.

Among other evidences against the "natural system" here, I noticed two specimens of *Luculia gratissima* from seven to eight feet high, and well clothed from the bottom. They made two growths this season, more like that of some kind of Willow than anything I could compare it to, many of the young branches being full five feet long, well ripened up, and the leaves shining like Oleander leaves. The treatment was that of Oleanders as near as possible, and will be continued till the turn of the new year, in order, if possible, to keep them from flowering till February, when the family is expected to return from the Highlands.

A new span-roofed forcing *omnibus*, or a house "for all," with a walk down the middle, and a bed on each side, is just such another as many of the new houses at Shrubland Park, of which I shall speak shortly. This was now occupied with cuttings one half, then a glass division, and the other half with Cucumbers in pots, and trained up under the glass. Here many thousands of Strawberry plants were forced last spring, and ripe Tomatoes—Tomatoes again—were sent up with them to town since April, till they could be had from the open air if needs be. This, also, was new to me, and will be equally so to thousands of my readers; but I forgot to ask Mr. Kidd this side of his process, and I must call on him again.

To see the quantities and number of kinds of Strawberries which he has planted and potted for next year, you might think the whole establishment could live on Strawberries, and nothing else, for some months; but then they are gathered by the bushel for routes and public breakfasts.

In the afternoon we strolled round Hampton Court Gardens, which are now under the directorship of Mr. Donald, a lineal descendant of the veritable and once young Donald of Dundee, who was Englishified at the Chiswick Garden, where he undertook Fortune's department on his first mission to China; but I lost sight

of him for some years. It was most lucky that I called in time to see the best new bedding Geranium that has been tried this season, *Dennis' Alma*, of which I spoke most favourably on its first appearance three years since. It forces as well as *Album multiflorum*, alias *Alba multiflora*, which is wrong, unless I am beaten on *Diadematum regium*, and it is one of the very best bedders of the greenhouse class, according to what I have seen of Mr. Donald's account, who knows them all. He had fifty plants of it in one of the large oblong beds at eighteen inches apart every way; but fifteen inches will be the stretch next year. He has propagated every inch of it for a grand display next season, and is going to reduce his stock of *Unique* to make extra room for it. He purposes doing more; but I seldom anticipate, unless it be a hard winter or something that way. I can always tell best after a thing is done; but I will just tell one thing—this gay bedder must take the place of the *Queen of Roses* in the "Fountain Garden" at Shrubland Park. Any plant which will suit Hampton Court will do in the Fountain Garden. Four pairs of the circles between the Heliotropes would not be too many, and four dozen or four dozen and a half will plant them. It is much higher coloured than the *Queen of Roses*, is not so strong, but after that style. The price now is not over one shilling a plant; but, after this story gets about, it will be up to two shillings and sixpence no doubt.

In both gardens they put the chief stock of Geranium cuttings into sixty-sized pots at once, one cutting in the centre of each pot. This saves a good deal of after-work, as nothing more is necessary till the plants are turned out into the beds; but for one who has sufficient room, five thousand do not know which way to turn just now, and for the next five or six months, and are glad if they can cram ten or twelve cuttings into the smallest pot, and keep them there as long as it is safe to keep the pot from actually bursting.

If it is really true that new brooms do sweep clean we shall soon have a clean sweep at both these places; but my own observations rather incline me to believe the new brooms are more than often allowed to get too near the fire, and then a disagreeable smell, and a more disagreeable sweep, and then again, *et cetera, et cetera*.

D. BEATON.

CRYSTAL PALACE.—SEPTEMBER 11TH.

(Continued from page 468, Vol. XVI.)

To the best of my recollection the width of the upper terrace may be from 200 to 300 feet, separated into two divisions by the 100 feet walk. On the west side next the Palace the ground on the same level as the wide walk is separated from a sunk parterre on each side by a half-moon or semicircular walk of moderate width, and, of course, on the same level as the main centre walk, and thus making something like a quadrant on each side of it. On the west side of this semicircular walk, that is, next the Palace, there is a verge of turf some twelve feet or so in width (but I just guess it), and on the same level as the lawn in the quadrant opposite. Along the sides of this main centre walk in this terrace, and the east side of the semicircular walk all round, large *Araucarias* are planted about fifty feet apart, each having a circle of dressed earth of some nine feet or so in diameter, and the outer part decked with a ring of flowers, such as the *Lobelia ramosoides*. Between each of these *Araucarias*, and likewise at equal distances all round, is placed a massive pedestal some four feet square, and some five feet in height, provided, or to be provided, with vases, urns, statues, &c.; and round each of these pedestals is a ring of grass, and then a ring of Scarlet Geraniums. On the opposite

side of this half-moon walk, on the broad verge we have spoken of as separating this walk from the sunk parterre next the Palace, pedestals and vases are also placed in a similar manner, but without any *Araucarias* between them, or any ring-beds round the pedestals; but the space between is devoted to circular and oblong beds alternately. Those who understand this description (and they may do it better by making a few lines on paper) will better follow us in alluding to the arrangement of the gardening part of the affair.

Commencing, then, with these large, deep-sunk panels, or parterres—one on each side—the first sight is one of great satisfaction. In the centre of each is placed a large, irregular, artistic reservoir for water, with the nozzles of jets just shining above it. Around this reservoir is a wide space of grass, and on it, at irregular distances from the sloping banks, a narrow chain of roundish and oblong links goes all the way round, the outside of the links being formed of Scarlet Geraniums, and the centre of Yellow Calceolarias. I am wrong in saying that the chain went all round, for at certain irregular corners it joins one side, and then proceeds from the opposite side of a group of Rhododendrons. I have no doubt these Rhododendrons look beautiful in early summer. I have as little doubt, on the principles of unity of expression and uniformity so generally recognised at the Palace, that the chain should be uninterrupted and perfect in itself. I should have no objection—quite the reverse—to pretty adjuncts to the chain here and there, in the shape of hearts and lockets, which ladies attach to such articles; but I would have each such adjunct of a well-defined colour, and in proportion to the size of the chain—very different from a hulking mass of Rhododendrons. Even with this exception, noticed, I believe, by few, this chain parterre is very pretty. I should just like to hazard the idea, whether, as there is as yet little in the grounds worthy of the name of grouping, these panels might not have been made into rich parterres, glowing with almost all kinds of colours. A more distinct feature would thus have been presented, and, from being looked down upon from all parts, there would have been no interference with the style of the building, nor yet with the planting of the quadrants on a higher level. One gentleman of refined taste, to whom I hinted this idea, said the chief objection would be the swallowing up of so much green sward, so pleasant for the eye to repose upon; but were I in a position to inflict such a loss in the sunk panel, I would make compensation by cheerfully throwing most of the much-praised beds round the half-moon walk into green turf, and their disappearance would be no serious loss. The only tolerable thing about them, besides the masses of colour, is that they can be examined by visitors from the walks.

Where to find the uniformity seen almost everywhere else, and equally demanded here in these flower-beds, would be a puzzler. The principle of uniformity is recognised by the sides of the main walk in the terrace; it is recognised on each side of the semicircular walk, so far as artistic architectural ornaments in pedestals, &c., are concerned. The planter and flower gardener have disregarded all this, and made a system for themselves. If it is extra desirable to have flower-beds along the sides of this walk, and close to it, both sides ought to be alike, and there could be no difficulty.

If there is an open departure from an easily recognised rule, it can only be justified by a seen necessity, or a perceptible superiority of the modes and practices adopted. Without dwelling on necessity, I shall just look at the two modes adopted for furnishing this semicircular walk on the quadrant side, because both, to my mind, are highly objectionable.

The beauty of such *Araucarias* and *Deodars* as those flourishing so well would be much enhanced by the lawn going up to, or within a short distance of, their

stems, and thus standing out boldly, depending on their own grandeur for interest. The dressed circle of earth round them, with a ring of low-flowering *Lobelias* outside, I certainly never expected to see. The pretty little things seemed quite ashamed and disheartened when they turned their sweet faces to their gigantic neighbours. I used to think that much of the beauty of a fine tree was lost if I could not see its base. By-and-by it will be fashionable to surround such a tree with a ring of flowers. The same principle of adorning such *Deodars*, &c., is carried out in the dressed grounds. Annuals, China Asters, &c., surround them in rings. Several men were actually turning *Chrysanthemums* out of their pots, and digging in their balls round such fine specimens, and then pegging the branches down. I instinctively felt something of the sensation for the poor roots that many a good old woman must have experienced acutely when, in half-civilised times, she was pricked with pins as a test of witchcraft. In small places such practices might be excused. If visitors delight in flowers, there is no want of room to gratify them here without resorting to such expedients. Far less can such a mode be accepted, as in the case of this half-moon walk, as a valid reason for departing from uniformity. It may be doubted if even the *Araucarias* there are in the right place, and if a more slender fastigate tree—if there was to be one—would not have been better. *There might then have been uniformity more easily.*

(To be continued.)

THE HEATH.

THE Heath tribe are mostly from the Cape of Good Hope, though some species are found in Europe; and only one, *Erica Australis*, in that immense country, Australia. Though extremely beautiful both in foliage and bloom, their culture is far from being general, arising, no doubt, from a prejudice that their management is difficult, whereas they may be grown as easily as any other tribe of plants, providing a little more care is bestowed on carrying out the necessary points of cultivation. In fact, the *Auricula* and *Polyanthus* are both more difficult to grow successfully than the Heath. To remove this prejudice, and encourage the amateur to try to grow them, I intend to write a few brief, yet plain essays, such as, I hope, will enable the veriest tyro and young gardener to enter with confidence into the field, and teach them to both grow them well and propagate them successfully.

The points of culture may be summed up under the following heads:—House and Pits; Soil; Potting; Watering; Summer Culture and Winter Culture; Insects; and Diseases.

HOUSE AND PITS.—Heaths generally neither thrive nor yet assimilate well with other greenhouse plants, though, with the assistance of a good pit, some of the hardier and more free-growing varieties may be grown in the pit, and removed into the greenhouse when in bloom, and returned into the pit after the blooming season is over.

This remark, however, applies only to such growers as cannot afford to have a house devoted entirely to the tribe. Whoever desires to grow Heaths to the highest perfection must have a house for them alone, and a good pit as well.

The best form of a house for the purpose is that known by the term, a span-roofed one. Very good Heaths, however, may be grown in a common old-fashioned lean-to house. In one of that form the late Mrs. Lawrence grew many of the fine Heaths she exhibited at the metropolitan Shows. The position of the house should be an open one with side windows, and means of letting out the extra heat at the top of the roof. The size, of

course, depends upon the means of the owner, and the number of plants he intends to grow. Ample means of giving air must be provided, for the larger amount of air is given, the more healthy and robust the plants will be.

The aspect of the house should be east and west, with the ends facing north and south. The entrances should be at the ends, which will enable the cultivator to give a thorough draught of air in warm weather. Shade, too, must be provided. The best is that made of coarse canvass fixed to a roller at one side, and nailed to a flat piece of wood on the apex, or top, of the roof. This shade should be on both sides of the house. That on the east side should be, on sunny days, let down in the morning, and drawn up at noon. That on the west side should then be let down, and drawn up as soon as the sun loses its power late in the afternoon. By this arrangement the Heaths have always a large supply of that necessary element, light, without being too much exposed to the burning rays of the summer sun. The internal arrangement depends, in a great measure, on the size and width of the house. If small and narrow, then a walk down the centre, with platforms on each side, will serve the purpose; but, if spacious in width, then a long table in the centre, with walks around it, and a narrow platform next the front windows, is the arrangement that will both keep the plants healthy, show them to the best advantage, and enable the manager to have easy access to every plant, to give them water, and observe their state of health, &c., besides giving the spectator an excellent opportunity of seeing and admiring their beauty when in bloom. The centre table or platform will be the best position for large specimens; and the side platforms for such as are advancing in size and growth, and for the more dwarf, small-growing species.

THE HEATH-PIT.—This is a favourite structure with me for Heaths. By having such a pit the number of plants may be nearly doubled. It may be of the common lean-to form, with brick walls all round. I prefer, however, an east aspect for such a pit. The sunshine is off it by mid-day, and then the shades may be removed, and the plants may enjoy a long afternoon of light without danger from its burning powers. Most of the nurserymen round London grow their large stocks of young Heaths in such a pit. I have myself grown them very successfully in one, even through very severe frosts; but, of course, the glass well covered with straw and mats, and the walls banked up with littery dung. When the winter was over, no Heaths I ever saw looked better, or flowered more freely. The pit so used is an excellent reserve nursery to furnish the Heath-house with a succession of blooming plants, and serves, also, as a receptacle for such as have gone out of flower. The cool floor of the pit, with the partial shade, made the walls give to the roots in the pots air exceedingly suitable for this tribe of plants. If any amateur intends to cultivate Heaths largely, his best plan will be to put up the pit first, perhaps twelve months or two years previously to building his Heath-house. Then procure a certain quantity of young plants, such a number as may, when full grown, furnish the house pretty well. Remember this rule, however, in all cases, whether the plants are small or large,—

NEVER ALLOW THE PLANTS TO TOUCH EACH OTHER. Crowding draws them, renders them straggling and naked, such unsightly objects as may be seen in one-half of the greenhouses in the kingdom. Whenever such plants occur, the best plan is to throw them away at once, for no plant bears cutting down worse than the Heath.

SOIL.—As the Heaths, when received from the nursery, almost always require fresh potting, the cultivator should look out for and procure the right kind of soil and pots sometime previous. Nature points out to the thinking grower that the best soil for any plants is that in which

it grows wild; therefore, for the Heath, he must obtain his soil from the moors, where our common Heaths grow the best. He must beware of the common, black, bog earth, though one species of Heath, the *Erica tetralix*, grows best in it. That kind of soil will not grow the Cape Heaths without an immense amount of care and a large admixture of white sand. No: the best heath-mould comes from our dry heaths, where the common *Erica vulgaris* grows plentifully and freely. Cart this home, chop it up, picking out roots, weeds, and large stones. Then put it through an inch meshed sieve, and mix it freely and thoroughly with pure white sand till it has a grey, silvery appearance; it is then fit for use. Many other soils and manures require a long preparation and frequent turnings to sweeten and pulverise; but heath mould is much better used immediately fresh from the moors. Besides this soil, materials for drainage must be provided. The best and cleanest are broken garden-pots. They should be broken into three sizes; largish ones for the bottom to cover the hole; rather smaller to lay upon them; and, lastly, a small size, not larger than peas, to be next to the soil. Upon this last place a layer of rough pieces of the soil, not larger than a hazel nut, for small plants. The soil and drainage may then be said to be well and duly prepared.

T. APPLEBY.

(To be continued.)

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Mr. Sheriff Mechi has kindly consented to preside at the Anniversary Dinner of this Institution, to be held at the London Tavern in June next.

CELERY AND ITS CULTURE.

HISTORY AND HABITAT.—Like many others of our most useful vegetables, the parent of this popular salad herb is a native of Britain, although it is possible we may be indebted to the foreigner for bringing it into notice, and most likely introducing it as a production from other climes. The wild Celery (*Apium graveolens*) grows in many places, but I have always found it in the greatest luxuriance in the salt marshes, or in ditches contiguous to salt water. From this we may learn that salt in moderate quantities is likely to be relished by this plant. Water, also, seems essential to its well-being.

VARIETIES.—Like all other popular vegetables which have to be sown every year, there is no deficiency of names; but the principal characters are *Red* and *White*, and of late years a pale-coloured variety has been added, called *Walnut-leaved*. It is not distinct enough for a separate class; it will, therefore, be annexed to the *Red*, and, as all growers are advised to have at least two kinds, I mention a few for them to select from.

Seymour's Solid White.—This is rather a dwarf-growing Celery, with but few leaves, broad-ribbed stalks, which blanch and become very tender. This is now an old variety, but is nevertheless good.

Crystal White.—This is more robust than the last-named, and, in some respects, is superior, being larger, the stalks lying closer together, and, as a whole, looking better; but it does not excel *Seymour's* in crispness, neither does it stand the winter so well.

Lion's Paw.—This much resembles the last-named, only in some of the heads I have noticed a tinge of red, but whether my seed was impure or not I cannot say; nevertheless, it is a good, useful Celery, and one likely to suit the purpose of the amateur. I could never ascertain any reason for giving it the name it is known by, but many others are equally inexplicable.

Manchester Large Red.—This, under the name of *Giant*, *Goliath*, and somebody's *Mammoth*, is all much the same, and, when true, is very good; but I have more than once been deceived with this kind, it being liable to *pipe*, as it is called, its stalks being hollow. Its main points, when good, are its size and hardihood, and those who like the aromatic flavour that unblanched Celery presents will find it exist in this kind in greater abundance than most others, the blanching process not entirely destroying it.

Dwarf Red.—To this are appended the names of several growers who have, or are supposed to have, improved it. It is certainly advisable to try these new kinds, as old ones have a tendency to degenerate. The *Dwarf Red* is, perhaps, the hardiest of garden varieties, and is otherwise a useful, good Celery, and by some more esteemed than the *White*.

Pink or Walnut-leaved.—This is an intermediate variety between *Red* and *White*, and, like both, is influenced by the season and situation it is planted in, and other circumstances. I have seen it very good, and have also seen it very indifferent.

TIME OF SOWING.—Celery is such a general favourite that few people can have it too early, nor yet too late. In fact, having it for a long period is one of the greatest points in Celery culture. A little seed, therefore, had better be sown in a pan or box, and set in some hotbed where there is a mild bottom-heat. The middle of January is not too early for this first crop, and later in the season, say the end of February, another batch may be sown, the seed in all cases lying some time in the ground before germinating. The main crop need not be sown before the beginning of March, and that, in most cases, I would advise being sown out of doors on some old hotbed, and if there be a little heat it will germinate the quicker; but in most cases in the south of England it will do very well, when sown at this time, without any such aid, the spot chosen being open and sunny, and the soil being a light, rich, sandy one, made very fine, and a good proportion of leaf-mould at top, to prevent the heavy rains and subsequent dry weather hardening it. The seeds must be only very slightly covered, as the plant comes up with such small seed-leaves as not to be able to force its way through a mass of earth. Care must be taken to preserve it from the attacks of slugs and other enemies at the period of its germinating, which is, perhaps, best done by surrounding the bed with a small barrier of lime, and scattering some of it or wood-ashes on the plants, or rather, over the surface of the ground at the time the plants are likely to be coming up. A still later sowing than the last-named may be made about the first week in May; this will do for the latest crop the ensuing spring. Its treatment will be precisely as for the other crops.

PRICKING-OUT.—This term, not very intelligible certainly to the denizen of a large town, signifies that the young seedlings are planted out somewhere to improve before they are finally planted out for good. For the earliest crop some place under glass must be provided; but a general hotbed is not the best place, as the roots are quickly amongst the dung, and, luxuriating there at a rapid rate, are so much the worse to remove when the time comes. Pans, therefore, or boxes are better, wherein there is some check to the downward tendency of the roots, and if the plants be not too much crowded, they can be separated with a good large ball to each, and planted out in the trenches at the proper time. When a good proportion of dung or leafy matter is mixed with the soil in the pans or boxes, the balls adhere to the plants so much the better. For the main crop some well-enriched bed out of doors is best, open to the sun, but if it be dry weather at the time of planting, the plants must be shaded some little time; but advantage ought to be taken of dull or showery weather,

if possible, for this work. Still it must not be delayed, as the plants often standing very thick on the seed-bed injure each other if allowed to remain. There is a certain time when they handle nicely, and it is best to take advantage of that time. In late, cold, or very exposed situations it may be necessary to sow the main crop under glass, and even to prick it out under that shelter too; but in most cases it is sufficiently early for the main winter crop when done out of doors, taking care that the ground it is planted on is good, and also that nothing in the shape of weeds or other impediments prevent its prospering.

TRENCHES AND THEIR SITUATION.—An open position is indispensable. Soil rich and deep, and though the plant likes moisture, the ground must not be unduly charged with stagnant water, otherwise it will not keep in winter. In a general way the fine alluvial soil bordering rivers or at the base of hills is the one best adapted for Celery, which is, perhaps, grown nowhere to greater perfection than in the valley of the Mersey and throughout Lancashire. Good Celery is also grown by the sides of the Thames, and, in fact, it may be grown tolerably good almost anywhere by supplying it with a rich compound to grow in, and sufficient moisture in the dry months of early autumn; and as few growers have much choice of soils, it is only requisite that the position of the Celery trenches should be quite clear of trees and other encumbrances; and, under whatever circumstances the ground may be in, it is at all times prudent to have the trenches made and ready for planting at least one full month before it is done, as this enables the subsoil to become somewhat fertilised by the action of the atmosphere, and where circumstances, or the preceding crop, render this course inexpedient, the material the plants are inserted in must be brought from some well-pulverised and healthy soil. This, of course, refers to the bottom of the trenches, as it is supposed the crop is to be planted out that way, the mode of which is so well understood as hardly to require notice here; but if detail be necessary it is this:—Divide the ground into divisions of four feet and a half wide, which will be a three-foot ridge and eighteen-inch trench; throw the earth out of the latter over the former to the depth of twelve or fifteen inches or more, and then stir the bottom if it be still good; if not, throw some more out; then wheel in good rotten dung, and mix with it some of the surface soil thrown out of the trenches, or, if better is to be had elsewhere, let that be brought. With this and the dung let the trench be half-filled, as a trench nine inches deep will, in most cases, be sufficient; but if the nature of the soil and other circumstances forbid that depth, then allow a greater breadth between, and the result will be the same. One thing must always be avoided—digging up an unhealthy subsoil at the bottom of the trench, and planting the Celery in that at once. In such a medium it is useless to expect it to thrive; therefore, when Nature has not provided a good depth of healthy, good soil, let the bottom portion be exchanged for better, and the vigorous growth of the crop will amply compensate for the extra labour occasioned. Good well-rotted dung is indispensable, and such as had formed the outside of the heap is better adapted for the roots at once penetrating than the interior portion. Mix it well with the soil in the trench, only let the surface be formed of soil alone, unless the dung be in a very decomposed state; in which case, some of it being at the top will prevent the waterings hardening the surface.

TIME OF PLANTING-OUT.—The first crop, if grown in pans or boxes as above, will be ready to plant out by the end of April, before which time the trenches ought to be prepared and ready for it, and the plants being gradually hardened off are in a condition fit to endure all the changes of weather that follow. Let the earth in the pans or boxes be broken into lumps,

so as each plant may have a good-sized ball, and, in fact, let the whole earth be used amongst them. As it is likely the whole will be a close mat of roots, plant them in the trenches about eight or ten inches apart in a straight row up the centre, and, if necessary, water at the same time. The after-crops may be planted at various times, from the end of May until the beginning of September; but, in a general way, July is the most favourable month for planting-out, those planted then furnishing the general autumn and winter crops. But a week or two is no particular object; the size of the plants, state of the weather, and other circumstances, often determining the time of planting, only it must be observed, that when large Celery is wanted it must not be too late in being planted, as it rarely happens that fast-growing Celery starts to seed; it is more likely for such as have had a check to do so when the next growing period comes on. The last planted-out Celery may be in broad trenches, as it is not likely to become large, and a trench six feet broad will hold a great number of plants in cross rows one foot apart, and the plants about eight inches from each other in the row. The earthing-up must be carefully performed in this case; but in other respects the treatment is the same, and the quantity of plants to a stated plot of ground is more than double what would be on the single row system, and it often happens very good Celery, too, is obtained this way. Watering in very dry weather will be beneficial to all the crops; but let there be plenty administered when it is given, and stir the earth a little next day. It is best to water in dull, gloomy weather, when there may, perhaps, be a slight shower, but not sufficient to reach the roots, and when the plant is in full growth manure-water may be administered with advantage, and in the early months of autumn the progress will be very rapid; but a portion of it may not be so much hastened on, as a rapid growth is not always compatible with hardihood, and it suffers accordingly in winter. It is better, therefore, to have various growths, the earliest of all being in the most favourable situation, a south border being often appropriated for a row or two where early Celery is wanted; but, if not wanted so soon, then the ordinary crop will, perhaps, suffice.

BLANCHING PROCESS.—Much difference of opinion exists in regard to this. Our forefathers used simply to earth it up when they thought it wanted it, which was certainly not a bad idea. Subsequently, however, it became customary only to do that duty in dry weather, and by-and-by it was advised to do that work very often in the growing season, beginning to do it very early. But some great authority stood forth, and told us that Celery ought never to be earthed up at all until it had nearly attained its full growth; consequently, we had the "heavy earthing period" for a time, and some growers follow it out yet; but, in a general way, a sort of medium course between the two extremes is best, and most likely to lead to a useful result. The plan is this:—Be not in too great a haste to begin earthing it up if it be growing away freely, but let it get a good height, and even then it is better not to give it much, but to allow the top a good deal of head-room, as I have found it to grow all the better for it; but by-and-by, as the season advances, the blanching or earthing-up process must be followed up faster than the plant grows, in order to make up the lost time at the beginning, so that, before the time the plant has ceased growing, it may have been earthed or covered up the full depth necessary for its blanching; for it cannot be too generally known that the growing and blanching processes go on simultaneously, and the latter is not well performed without the former, neither is it in so healthy a state when it has to be done so; therefore, let the blanching be done before too late in the autumn in all but the very late crop.

A better substance than the earth of the place is often necessary to enclose the Celery that is intended to keep some time, and various substances have been tried for that purpose. Introducing the plant into a drain-pipe of three or four inches diameter has been tried by some, but not with any particular benefit, except in cases where nothing better exists, and the ground is exceedingly stiff and wet. For the purpose it is most intended for—"keeping away worms"—it is not suitable. It is better, therefore, to trust to some drier material than the earth, and more unpalatable to worms, slugs, and other insects, and the best that I have met with that way are coal-ashes. Sand may also be used; but its density is such that it presses too heavily against the plant, and often finds its way into the heart of the plant, and its injury or death is the result. Peat-earth is very good, and when this can be had it will be of great service, as, apart from its being lighter than other earth, it is a better preservative to most things buried in it. Saw-dust has been recommended by some; but I have never experienced any benefit from it; besides which, it must be borne in mind, that whatever is used as a blanching material usually gets mixed up with the soil of the place, and therefore nothing ought to be used that is likely to injure that ground; rather let it be such as will benefit it, which peat-earth generally will do. Supposing coal-ashes to be used in a wet, cold, damp soil, a small quantity next the plants will do, and some of the ordinary earth behind it to form the bank, and when the last earthing-up is given, let the earth have a ridge-like shape, so as to throw off as much of the water as possible into the trench. For that purpose the sides may be beaten with the back of the spade, and the whole made into a nice, orderly, sharp-looking ridge, there being ashes, as stated above, quite up to the apex, but backed with earth to keep them up, as well as to save quantity. At the last earthing-up the plant ought still not to be choked up too far, as I confess not being an advocate to a too close smothering up at any time, and certainly not during the main growing season.

WINTER TREATMENT.—This is simple enough, as the plant requires very little doing to it at this time. A little litter thrown over the tops and part of the ridge will preserve it against severe frosts; but it is only in very severe weather that it needs any covering at all. Still it would be prudent to take up a quantity before bad weather sets in, and lay it by amongst sand in some cool place; it will keep a long time, and be handy to get at in all weathers. The washing and dressing of it for table belong to other departments; but the amateur, who may, perhaps, do all himself, will find it lose much of its flavour if allowed to remain many hours in water. A short time is necessary in most cases, but the precise time can only be learned by the taste of the party partaking of it; but it ought never to be less than one hour. The clearest spring water only ought to be used; and the less handling it has the better it looks, provided it be clean.

REMARKS.—In the ordinary routine of a small garden it is usual to occupy the ridges between the rows with some other crop in the summer season. This method is much preferable to delaying the preparations of the Celery trenches till they are wanted, as there is a better chance of the materials in the trench being in a better condition to produce a good crop than when the whole work is delayed to the last minute. In a general way it will be found to do well after a crop of early Potatoes, or even Peas; but the Cabbage tribe often leave such a nest of slugs and other enemies on the ground, that it is better to follow something else. In most gardens the proportion under the Celery crop will often amount to one-eighth of the whole available space under cultivation, and sometimes even more than that. It generally affords a good place for Onions the

next season; and as the roots are, in a measure, confined to one spot, it is not an exhausting crop; neither is it an unsightly one to be thrust into the back grounds; and, whether used for cooking or salad purposes, it will be found that medium-sized Celery is the best, and keeps longest. But those who take pride in remarkable productions may have this in an overgrown state the same as other things, as it is a gross feeder, and will drink in manure-water of any strength like a regular toper; but, as stated above, such Celery goes soonest to decay; therefore, it must not all be like that. I might, also, state here, that in the arrangement of the ground it is better to have the rows pointing north and south; but this is often determined by other circumstances; when not, the nearer it is to this the better, other conditions being also favourable.

J. ROBSON.

PLANTING BROCOLI.

HAVING observed an article on planting Brocoli by Hardy and Son, Malden, in *THE COTTAGE GARDENER*, No. 417, page 459, I write to say that I think they have outstripped their calculations regarding Brocoli, particularly as a winter crop. They seem to make no allowance for some, or, it may be, all of the plants being killed with frost in a severe winter. I consider frost to be the worst enemy we have in winter to the Brocoli crop; therefore I think Hardy and Son quite out if they think to persuade any man of experience to plant Brocoli three feet square to stand the winter.

Likewise, they advise those who have their Brocoli planted closer than three feet square to have them thinned out immediately. Now, if I were to thin at all, I should content myself till the most severe frosts were past, and then I would take out all that were injured by the frost; and after that, I think, in most seasons and in most places, the crops would be found thin enough. I am not an advocate for "very" close cropping, always adopting a medium distance in every sort of crop; and every gardener, and almost every other person too, knows that a medium-sized head of Brocoli or Cauliflower is preferred before a very large one.

The system I adopt, and have seen adopted by first-rate kitchen gardeners, is to give the ground intended for Brocoli a good dressing with well-rotted manure; and, as manure is the head gardener in that department, I always give plenty. Having dug the ground well, I line the rows off two feet apart, and put the plants twenty-two inches apart in the row. By following that system with Brocoli you will have good medium-sized heads, somewhat larger than tea-cups, and not spritted either; neither will there be any fear of one plant gaining predominance over ten other adjacent plants, which, by the way, I never saw nor heard of before. If you should think this worthy of a place in your columns, it may, perhaps, be the means of preventing some from making what I consider a great mistake, viz., thinning their Brocoli to one yard square, which they would find out to their cost in due time. I invariably plant about the middle of July with success. Hardy and Son's wide planting will do for seed stocks, but not for table crops.—N. MERCER, *Glenormiston, Peeblesshire.*

INCREASED CULTIVATION IN IRELAND.—The excellence of the harvest in Ireland, and the large produce from the increased number of acres cultivated, add to the many causes all tending to a reduction of prices.

TOTAL EXTENT, IN STATUTE ACRES, OF WHEAT AND POTATOES GROWN IN IRELAND IN 1852, 1853, 1854, 1855, AND 1856.

	Wheat. Acres.	Potatoes. Acres.
1852	353,566	876,532
1853	326,896	898,733
1854	411,284	989,660
1855	445,775	982,301
1856	529,363	1,104,590

HYPERICUM OBLONGIFOLIUM.

Among the novelties imported by Messrs. Veitch & Co., of Exeter, is this handsome species, which is represented to be hardy. Mr. Thomas Lobb found it on open hills at Mofflong, a station in Khasia well known to Indian travellers. Griffith speaks of three species as growing there, one of which (No. 880) with five styles, said to be a branched shrub two to four feet high, inhabiting wet places in the valleys, may possibly be this. In general appearance the plant resembles *H. elatum*; but it has very large, rich, reddish-yellow flowers, and firm sessile ovate acute coriaceous leaves, slightly marked with transparent dots, some of which are minute and circular, others larger, long, and linear. The flowers appear at the ends of the branches in forked cymes, having oval leafy bracts recurved at the point. The sepals are large, roundish ovate, very blunt, and slightly tooth-letted at the edge; the stamens are scarcely polyadelphous; the pistil has five distinct recurving styles, rather shorter than the ovary.—(*Horticultural Society's Journal*.)



Hypericum oblongifolium.

NAMING FLORISTS' FLOWERS.

OUR correspondent, "H. C. K., *Rector, Hereford*," has given us another proof (page 476) of how university-men mistake the use which is made of Latin in the language of the sciences,—the scholastic delusion, as I call it. He says my name *Diadematum regium* is nonsense. I assert, and I can prove it, that this name is as good and true as ever Virgil himself penned; and I can prove, also, that *Diadematum regina*, which he says "has the advantage of being sense," is no sense at all out of the circle of the said delusion. I can prove, also, that a thousand such names as mine can be brought up from the first authorities, and I challenge him to produce thirty names on his model by a third-class authority. I could put him on the right scent now, but he hit me too hard, and I challenge him to first prove by the school rules that I am wrong. Assertions go for nothing in fair criticism.—D. BEATON.

TWO NEW GRAPES.

It would appear as if there was just now a shower of new Grapes; and it speaks much for the intelligence of the cultivators of the present day, that their efforts have been so successful, and so productive of great results. In addition to the varieties we have brought before our readers during the past few months, we have now the pleasure of adding one more from Mr. Fleming, of Trentham. We have been favoured by Mr. Fleming with a specimen of his new Grape, and we can safely say, that we never tasted one richer in flavour, if so rich. It was only the portion of a bunch which we received, and, therefore, cannot describe the character of a perfect one. The berries are oval and jet black, covered with a beautiful bloom; and they contain from two to three stones; the flesh is very melting, juice abundant, and of a very sugary and vinous flavour, and with a fulness which approaches a syrup. The skin, though not thick, is so membranous as to warrant us in supposing it will hang well. In a letter we received from Mr. Fleming, he says, "It is one sent to us among many others—twenty sorts at least, all of which we planted in one house. Some came from abroad, some are English-raised seedlings; we had them, in short, from all quarters, and there is

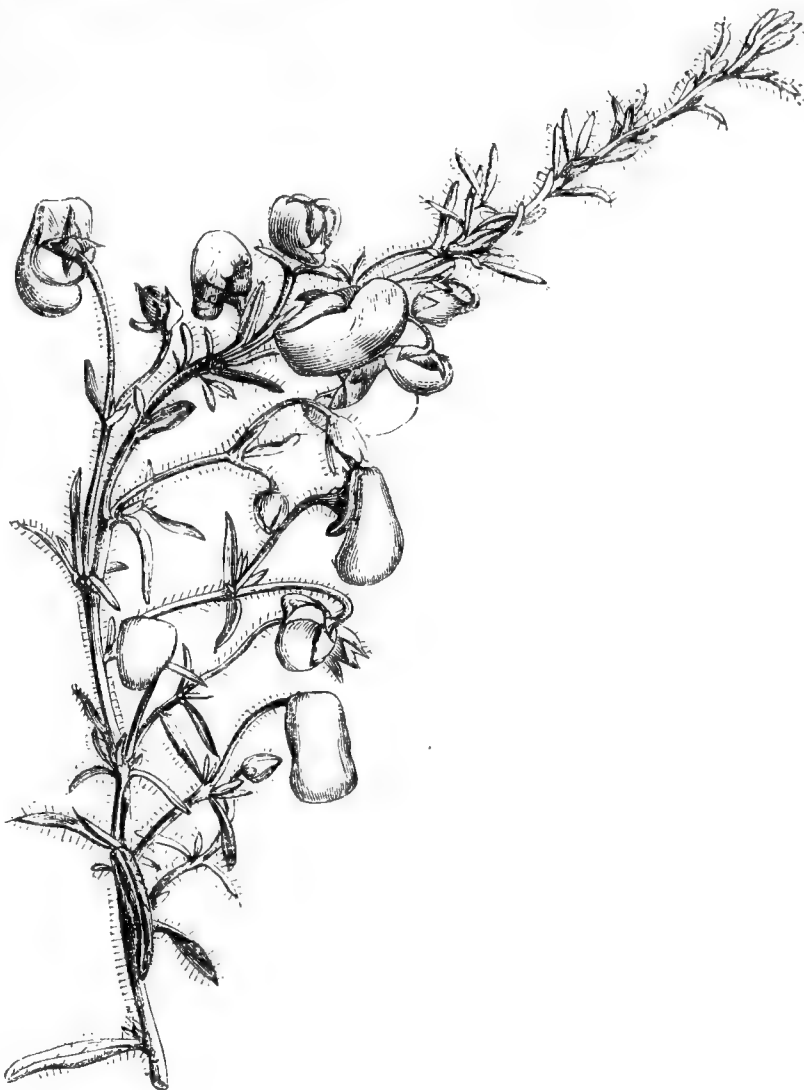
no note or history of this one. It is a free grower, and resists powerful sun better than any Vine we have, and it ripens with the Hambro', but keeps plump long after the Hambro' shrivels. The size and shape of bunch are much that of a Muscat of Alexandria, and the colour a fine Plum black, which comes on it regularly and quickly, and not slowly and irregularly as in the case of many of our black Grapes, few of which colour well even under the best treatment. It will not only prove to be an early Grape, but, from its keeping qualities, it will be a good winter Grape. We are preparing to plant a whole house of it." This last sentence speaks volumes; such a course pursued by such a gardener says enough for the character of this Grape to stamp it at once as a most valuable variety.

If allowed, we would suggest that the name of this Grape should be *Fleming's Trentham Black*.

Another variety we have received is from Mr. Melville, gardener to the Earl of Roseberry, Dalmeay Park, N.B. This, also, is a Black Grape, raised from a cross between Black Prince and Black Damascus. The bunch sent us was fourteen inches long, loose, and not shouldered, the berries large and oblong, jet black, and covered with a fine bloom; the flesh is green, but, unfortunately, they were not ripe, and even what flavour they had was destroyed, from moss being used as a packing. We should like much to see this variety again when it is more advanced in ripeness. Mr. Melville describes it as being a variety which hangs for a long time.

CALCEOLARIA ERICOIDES.

ALTHOUGH this plant, when in the state in which it is here represented, straggling upon the open border, does not hold out much promise of beauty, yet in its natural condition, upon its own mountains, it would seem to be really handsome. A dried specimen now before us, collected by Hartweg, in Colombia, is a branch of a stiff erect shrub, terminated by a dense naked panicle nine inches long. Mr. Anderson, of Edinburgh, from whom this was received, raised it from seeds communicated to him by Dr. Jamieson, of Quito, and describes it as a wiry woody shrub, partly upright and partly procumbent; when the wood is ripe, very like *Erica odore-roseæ*. Its seeds were gathered at the height of 12,000 feet above the sea. The whole plant is covered with a short coarse felt. The leaves are linear, with the edges rolled back till they meet. The inflorescence is also covered with a small coarse down, that even extends over the flowers, which are yellow, with a narrow corolla folded upon itself by a bend near the middle.—(*Horticultural Society's Journal*.)



Calceolaria ericoides.

LADY DOWN'S SEEDLING GRAPE.

I OBSERVE that in THE COTTAGE GARDENER for September a correspondent from Sheffield asks for information respecting a Grape called *Lady Down's Seedling*. I know the Grape, and, if you think the following information worth inserting in your next number, you are welcome to it.

About two or three years ago, upon the recommendation of a friend, I purchased that variety; but wishing, before I gave it a permanent place in my Vinery, to see and taste, if possible, the fruit, after a good deal of trouble I ascertained where it was cultivated, and from the kindness of the gardener procured a few berries as a sample. Whether they were fully ripe, or grown under favourable circumstances, or not, I cannot say; but certainly the fruit disappointed me. It was neither large nor, in my opinion, well-flavoured. Its only recommendation was its keeping property; but in this respect it was not superior to the *West's St. Peter's*, nor to the *Black Barbarossa*, while, in point of size and flavour, it was infinitely inferior to them. If the berries that were sent me were samples of good cultivation, sure I am that it will disappoint the grower. It is, however, perhaps, hardly fair to judge positively of a Grape from one, and that so small a specimen. It is now cultivated and fruiting this season in a gentleman's Vinery in this neighbourhood, and I shall have an opportunity of again testing its merit.

Should your correspondent wish me to report further of it I shall be glad to do it.—H. M.

[We shall be very much obliged by further information, and the oftener you favour us with your notes the more shall we be gratified.—Ed. C. G.]

QUERIES AND ANSWERS.

GARDENING.

REPLIES TO BEGINNERS.

VERBENA CUTTINGS.—“I put in, as you recommended, good large pieces, and they will not hold their heads up, do what I will, though they have a little heat below them.”

[Long cuttings, when in a growing state, can, in general, be best managed with bell-glasses. In the case of Verbenas, all above two inches in length I consider rather long. The best to choose are small side-shoots, about that length, slipped off with a sharp knife close to the older stem, just

dressed a little there; the lower leaves removed; the flower-bud picked out, if there is any; and then firmly inserted by the side of a pot in sandy soil, the pot being half-filled with drainage. These—with a little bottom-heat, shade from bright sunshine, and a little air at night—will strike in about ten days, when they should be hardened off, before being transferred to a cool greenhouse. There is one great disadvantage in deferring this work to October. The cuttings will strike freely enough either in pots, as above, or when pricked out in such a bed; but if September has been at all hot and dry, it will be difficult to get cuttings that are not less or more infested with thrips and red spider, the former more particularly. It will be advisable to wash the cuttings, when made, in a mixture of such sulphur-water as was lately referred to, with some tobacco squeezed into it, holding the cuttings by their lower ends, and pulling them several times through it, and then allowing them to lie several hours, and examining again before inserting them in the soil. I have had thrips make their appearance even after this precaution; but it is, so far, a safe preventive, and should also be adopted at this season with *Calceolaria* cuttings that there is any doubt about. Of course, if you have read previous numbers, you will know how to make each joint on a longish stem into two cuttings by splitting it up the middle; but the little pieces I have referred to will be found the best to deal with at this season.]

SAVING OLD VERBENAS.—“I lifted my plants last autumn, potted them, and placed them on a table close to a window, in a room from whence frost is excluded; and, though they looked well for a while, by Christmas they were sickly, and by the end of January they were dead, though *Geraniums*, &c., kept very well.”

[There had been little or no fresh root action; and, when the organisable matter stored up in the plant was disposed of,

the leaves could get no fresh matter to feed upon, and the plants died in consequence. The *Verbena* is one of the worst things to do well when taken up and potted late. If fresh roots are not formed before the short, dark days, they may remain green for a time, and then they will, ere long, say, good bye. I do not hold out any hope that you will be a bit more successful this year, unless, perhaps, you were to pot directly, and, in about a week, prune well back, in the hope of getting young shoots to grow. I have thus succeeded very moderately with great care. If, six weeks ago, you had placed a shoot over the mouth of a small pot filled with light, sandy soil, and put a stone over the shoot, to keep a joint or two just in the soil, and watered now and then, you would now have had as many nice-rooted plants as you used pots, merely by severing them from the mother plant as you would cut off a Strawberry runner after it was rooted. You might try the same now, though rather late, and if the autumn is mild you will succeed. But in order to have two strings to your bow, take off such little tit-bits as are mentioned in the previous answer, remove all the bottom leaves, shorten the middle ones, and leave only the two little ones at the top extended, picking out the flower-bud if there is any, the curtailing of the leaves being for the purpose of lessening the perspiring surface of the cutting. Then examine your pantry or cupboard, and see what bell-glasses, bee-glasses, or crystal tumblers you can conveniently spare. Select such pots that the glasses, turned upside down, will stand just within the rim of the pots. Fill such pots half full with drainage, then sandy loam within an inch of the top, and half an inch of sand above all; water it, and let it stand for a day; then sprinkle a little more dry sand over it, make a mark with your glass, and, at a little distance from that mark, in a ring all round, insert your cuttings thickly and firmly, with their heads leaning a little inwards. Fill up the little holes made with dry sand, water gently, and when the tops of the cuttings are dry, place your glass firmly over them, set pots with their glasses on the table, shade from bright sunshine, and, after a day or two, if the room is not very dry, give a little air at night by raising one side of your glass a little. If you can just dew the cuttings in an evening, without wetting the soil much, they will strike all the sooner. The same dewing in a hot, sunny day will be better for them than dense shading. With a little extra care for a fortnight or three weeks you may thus obtain nice, small, healthy plants, that will be easier kept than old ones, and do you good service next season. When rooted, the glass must be removed by degrees, first tilting it up on one side at night, then altogether removed at night, and by-and-by during the day. If the atmosphere of the room is at all dry, all the plants will be benefited by the table on which they stand being covered with damp moss. I believe the first *Verbenas* I struck were so managed; and, having neither syringe nor fine-rosed watering-pot, I used to place the pot gently on its broad side when the soil was wet enough, and whisk the cuttings with mist, thrown from a brush made of fine hay dipped into water. A very little practice insured something like perfection in giving a misty, vapoury, wetting dew from such a rude instrument; and, after all, most of the fine instruments now so much praised are only for ladies and gentlemen that must keep hands and feet unsoiled. A rough practical would have all the affair done and settled before they were ready to commence. A gentleman, some time ago, suggested a great improvement for the water-barrels; but, before a pailful could have been got by the improvement, I should have expected to have seen the barrel of some ten pailful or more emptied and ready to be filled again. I should have no wish to see our lady amateur with hands as rough as my own. She may, with propriety, defend herself with stout gloves, &c., which to me are an abomination; but one thing is certain, that gloved or ungloved, all who would garden in earnest themselves must neither be too refined as to what they touch, nor the make-shift instruments they must at times use.]

SIZE OF, AND TIME FOR MAKING CALCEOLARIA CUTTINGS.
—“Some six or eight weeks ago a friend took up some shrubby *Calceolarias* out of his border because I admired them so much, and sent them to me, that I might get plenty of cuttings at once. I cut up all the shoots, and planted

them in a shady place under hand-glasses, and I find that very few are growing. What can be the reason?”

[The chief reason I suspect to be, that the plants at that time contained little but flower-stems, and these never do strike easily, and worst of all in summer and autumn. What I would choose as cuttings would hardly then be found, or, if found, would be exceedingly spongy. I would advise sending now to your friend, not for a hamper of his plants, but for two or three hundred little firm side-shoots, from two to three inches in length, slipped off from the stems; and if to be sent by post in a tin or card box, to have the lower leaves removed to lessen the weight, and packed dry; for, if not long on the road, spreading them out and sprinkling them over with water will make them right in an hour or so. These inserted in pots, boxes, or in the ground, in sandy soil and in a shady place, will root by the first or second week in November, though, if early-rooting kinds, the rooting will take place before then. It is only time and labour thrown away to commence propagating these shrubby *Calceolarias* before the end of September, as, if the plants are allowed to bloom freely, and do not have the tops pruned off on purpose, they will not produce those nice stubby side-shoots much before that time; and they answer so well, that they should be patiently waited for. —R. FISH.]

A DESERVING MAN WHO WANTS A LITTLE HELP.

“Your interrogatory clause has induced me to take my pen once more in hand to give you a few details respecting myself and my present position.

“To commence, in a few plain words, and to give you a proper insight into my case, I must say, in the first place, I am poor, unfortunately poor. My father was only an accountant or book-keeper at a cotton-mill; and I am the centre, or middle-most, of a family of nine children. Father and two brothers are dead. Two elder brothers are married, myself and another elder brother, and three younger sisters, are left at home with our mother; so that you may partly compute that we are not abundantly stocked with “world’s gear;” but then—

“A man may ha’e an honest heart,
Though poortith hourly stare him;”

and it is upon that and my poor abilities, together with some unexceptionable references, which I can procure, that I must stand. I am twenty-four years old. I am a five years’ old teetotaler. I am a very hungry reader; and, unfortunately, for want of some wise head to direct and control my reading, I have, among some very sound corn, picked up a great amount of chaff; but, having now to make mine own way in the world, to get mine own living, and assist a little at home, the resolve is grafted into me to endeavour to be something, relying upon the Great Disposer of events for strength, and upon the kind assistance of a few sterling friends to aid me to achieve success.

“Seeing, then, the demand upon me, you will perceive that it will be necessary that I should always be in pretty good wages; and, therefore, the idea of entering a garden where a premium would be required must be reluctantly relinquished; and I must work myself up, step by step, with a steadiness and perseverance that ultimately must insure a happy termination.

“Let us, then, be up and doing,
With a heart for any fate;
Still achieving, still pursuing,
Learn to labour and to wait.”

“These lines, and my motto of ‘Excelsior,’ shall be my guide; and, somehow or other, I have a presentiment that I shall succeed. I have thought to endeavour to get into a good garden in the neighbourhood of Manchester; and then, perhaps, I might get to such a place as Chatsworth or Trentham, and then in the neighbourhood of London.—EXCELSIOR.”

[We shall be very glad if some of our readers can aid this young man. We think he would not disgrace their patronage. We have his address.—ED. C. G.]

CUTTINGS VERSUS GRAFTS.

"I am about entering on some experiments to test Mr. Errington's idea that much of the uncertainty of our fruit crops is to be traced to the somewhat unnatural process of grafting. The continued abundant crops of Currants, Gooseberries, &c., raised from slips would seem to favour his suggestion. I have always understood, however, that Apple and Pear-tree slips were exceedingly difficult to root. Can Mr. Beaton, who works such wonders in flower culture, help us with instructions as to the best manner, time, place, and soil for striking slips from a Jargonelle or Ribston Pippin?"

"Is the Bee a native of England? It sometimes occurs to me, that if so, we have here the great natural fertiliser of our fruit-tree bloom, and that to the wholesale destruction of so many hives in procuring honey is to be attributed much of the repeated failures in fruit crops. A case may well be supposed where the pollen of the flower was ripe and healthy, and yet from wind, rain, or other causes, it was scattered elsewhere than on the stigma, to which the action of the Bee might convey it. Would it be profitable to keep a hive in an orchard for this purpose only, apart altogether from harvesting the honey?"

"What plants are best for a hedge along a fence entirely overhung with branches from the orchard?—WILLIAM MCGOWAN."

[In generalising we must take care not to confound natural law with practice, which is but artificial. It does not follow as a natural law, or consequence, that, because one plant from a cutting answers better than another from a graft, both should do equally well from cuttings or grafts. We have seen an old Pear-tree propagated for the nursery trade from layers every year as regularly as layers of Cloves and Picotees. That was in "Peacock's Nursery," Leith Walk, Edinburgh; and we have not the smallest doubt but every kind of Apple or Pear in Herefordshire, or in the Carse of Gowrie, would come from layers just as easily as Cloves and Carnations. It is yet an open question if the pollen is necessary for the better development of our dessert fruit, for we never eat the fruit at all, only the covering over the fruit or seed. This covering may be all very good, and no fruit in the inside. Did you ever consider this question in that light?"

There are plenty of Bees and Humble Bees left, although so many are destroyed.

Privet will do for your hedge.]

ORNAMENTING PONDS.

"AN OLD SUBSCRIBER would feel greatly obliged if the Editor of THE COTTAGE GARDENER would give some directions with regard to the formation of pieces of ornamental water at country villas. The writer has three formal straight ponds following one another, with a slight fall of about three feet between each, and the termination quite visible. He feels sure that they might be made a very pretty object in the landscape, but does not know how he ought to go about it, not having a landscape gardener near him to consult. Any hints would be very acceptable. The directions in Vol. I., page 168, are intended more for a garden than for ponds in a lawn."

[This subject can only be treated very generally, in the absence of drawings to explain the different ways. The first and fundamental principle is this—that a piece of water in a garden or pleasure-ground, or to add effect in a distant landscape view, must be so placed that you cannot see it all round from any point of view. Any one who can but master that simple rule may be entrusted with the formation of any piece short of a Loch Lomond. Water, in general, finds its own level; but ornamental water never fails to show two distinct levels to the eye of a true landscape painter—its own level first, and the level of the brains of the man who formed it among the brains of his fellows. If you could manage with planting to see your first pond and part of the second in one view, but so as to look as belonging to one piece only, and as much of the third as you can without actually seeing the end nearest to the middle piece, no man could give more effect to these three pieces of water as

a landscape view. A stranger would think the three were all in one piece, and that he only could see but the out-bays of a large lake. A duck-pond, if you cannot see it all at one view, gives the idea of a large extent of water, and the farther it is from the eye adds to the deception.]

BEDDING GERANIUMS.—DELPHINIUM FORMOSUM.—CERASTIUM FORMOSUM.

"Will you be kind enough to inform me if *Master Squire's* and *Princess Alice* among the scarlets with white eyes, and *Fair Helen* and *Mrs. Haggitt* among the sweet-scented or oak-leaved section of Geraniums, are really good for bedding purposes? I have cuttings of them, but know nothing of their qualities.

"I am anxious to make the most of one small plant of *Delphinium formosum*, and shall be glad to know the best way of keeping and increasing it against the spring.

"The *Cerastium tomentosum* is a new plant to me, and, as Mr. Beaton has not mentioned it, I shall be glad to know what it is worth, and how to manage and increase it for edging flower-beds next season.—FLORA MONTAGUE."

[We never heard of *Master Squire's* Geranium. *Princess Alice* is a good rosy bedder. *Fair Helen* and all her race are not for beds, but for mixed borders. *Mrs. Haggitt* we never heard of.

Pray let *Delphinium formosum* alone for one more year. Your plant of it can only be a nursling yet, and you may do more harm than good by attempting to divide it at the roots, the more sure mode of increasing it.

Cerastium tomentosum is as hardy and as old as Chickweed, and requires just the same treatment, which is, to be very resolute in keeping it within bounds. Mr. Beaton has spoken of it repeatedly; but you may first have to establish it from cuttings, which root as freely as anything; after that by dividing it at the roots. Very likely it may be scarce in the trade, and if it is the price will be charged accordingly; but it may be picked up in many old gardens where old-fashioned plants abound.]

DELPHINIUM HENDERSONII AS A BEDDER.—BEDDING DAHLIA.—EDGING TO SHOT-SILK BED.

"S. S. will be glad to know the botanical name of the inclosed plant, which 'beds well' with a scarlet Verbena.

"Also, if *Delphinium magnifica* or *Hendersonii* can be judiciously used to 'bed' with in a flower-garden. The colour is beautiful. Will they keep up bloom sufficiently to do so?"

"What is the best bedding *Dahlia*?"

"Can Mr. Beaton suggest an edging for his *Shot-silk* bed? The edge always looks bare and shabby. Would any Verbena answer pegged, as *Margaret* or *Vulcan*, or any other?"

[Your plant is the Variegated Mint, of which you have heard so much this season.

Delphinium Hendersonii, treated as we said lately, will answer as a single bed by itself in some corner of the garden, not in a regular flower-garden where a lot of beds stand together. The way to keep *Mignonette* green and in fresh bloom from May till November is to cut off every one of the flowering shoots as soon as the seeds in the first seed-pod on the stem are full size—say to "go over it" every ten days in the season. Now, if you apply this ancient practice to *Henderson's Larkspur* and *Deering's Formosum Larkspur*, the best of the two, they will keep in bloom till October. They do not seed; but, when the flower-spike is two-parts gone, cut it off, and two more will come up in place of it.

The best bedding *Dahlia* is yet, most undoubtedly, the dark purple *Zelinda*. The *Crystal Palace* *Dahlia* may yet turn out a good one, but this season it is not one-fourth so good or so showy as *Zelinda*. We may remark on bedding Dahlias that dwarfness is only one good "point;" bright colour is of equal importance.

Mr. Beaton is horrified at the idea of putting an edging to a real *Shot-silk* bed; but, as no one else has yet been able to "do" this bed, any one may edge the hodge-podge imitations with Variegated Mint, or better with *Cerastium*

tomentosum; at all events, any "coloured" plant will only make it more difficult to "do."]

PASSION-FLOWER AND CYDONIA JAPONICA NOT FLOWERING.

"A *Passion-Flower* and *Japonica* are trained against a wall with south aspect. The former has stood some years, and of late has only flowered very badly. I think the soil requires to be renewed. I wish to know what soil or manure should be used, how, and when. The bed in which they stand is one yard deep, and the plants are one yard and a half apart. Liquid-manure, also guano, have frequently been used.—A DARLINGTON SUBSCRIBER."

[No manure or manure-water is half so good for woody-flowering shrubs and woody climbers, such as yours, as good fresh soil from a common, or bank, or meadow; but any kind of soil that will grow good Cabbages or good Onions will do for the *Passion-Flower* and the *Japonica*; the latter will grow and flower most freely in a soil in which the *Passion-Flower* would be half-starved after the first three years. The roots of your *Passion-Flower* have travelled beyond the bed, got into poor ground, and you must mind that when you renew the bed March is the best time for the work, and till then you have plenty of time to collect earth, and bones, and some charred sticks or refuse, which are very useful for good climbers. Any root of the *Passion-Flower* which is more than four feet long you may cut to that length, and pieces of the cut-off parts about six inches long will make good cuttings, which will soon make as good plants as the old ones. Do not cut off any of the roots of the *Japonica*, but see that some of them are not too deep in the earth; if they are, and seem to go straight down, the best way is to cut them off as low as you can without disturbing the subsoil.

PROPAGATING BEDDING-PLANTS.—LIQUID-MANURE.

"Will you inform me—1st. When to sow and how to propagate to the utmost such plants as Geraniums, Verbenas, Petunias, Calceolarias, and other bedding-plants?

"2nd. How to apply the urine from the cow-house to such plants, and what sort of compost to use?

"3rd. Will you inform me of a good work on the propagation of greenhouse and bedding-plants? I am not a gardener, but a file-smith; but I am very fond of gardening, especially plant growing. I have just finished a greenhouse, sixteen feet long and ten feet wide, in which and my garden I spend all my leisure time. I have begun to take in THE COTTAGE GARDENER: this is about my tenth week. I am also taking in the COTTAGE GARDENERS' DICTIONARY, but I feel a want of something else.—W. H. S., *Sheffield*."

[1. It is now too late to sow seeds of any of the plants you name; we must wait till about the last week in March for that, unless March should turn out a fine bright time of it; then we might sow a fortnight or so earlier. It is also now too late to make cuttings of any of them except the *Calceolarias*; but they do best from October cuttings, and any little shoots of the young wood will do if they are cut across at the bottom of a joint, and are planted rather light, about half an inch deep in a moist, sandy compost of one-third sand, of any colour, one-third rotten leaves, or rotten stuff from the bottom of a wood-stack, or any other heap where things rot and lie about, and one-third from the surface of a piece of garden ground or flower-bed, the whole to be well mixed, and then screened through a sieve, such as for sifting cinders, what remains in the sieve to be kept for draining pots with; one inch of it over the hole will do after a hollow something is first put all over the hole. Now, if you will just remember this at first starting, it will save you from a world of trouble, because every cutting of every bedding-plant in England will root in that one kind of compost, and almost every cutting which one wants for a greenhouse like yours the same; then, every cutting in the world is more safe, and is easier to manage, if the thickness of a five-shilling piece of sand is put over the surface of the compost. All pots for all manner of cuttings ought to be very nearly full, so that no more water

than the thickness of a half-crown piece could lie on the top at any one time. Some people murder their cuttings by leaving an inch or more to take slushes of water; but none except the very commonest cuttings could stand that. *Calceolaria* cuttings prefer being in the damp, so as to be like things standing out of doors, at this season. That is always the secret with them; they want no more heat than the season gives.

2. The urine from the cow-house is just as dangerous for pot-plants, and seeds, and cuttings, in the hands of a young beginner, as strychnine is in the hands of bad men and women. You may think this is going too far, but depend upon it there is not the value of a pin between the two, and the two are most useful articles when we know how to apply them; but mind one more special advice—if you have a thousand plants, not one of them must have liquid-manure from this time in the autumn till the first day of May. This rule is absolute in your case. One wine-glassful of the runnings from the cow-house is quite enough for three pints of pond or rain water to begin with, and every Tuesday and Friday in June, July, and August is often enough to give so much. In May and September once a week is quite often enough.

3. There is not a better work on striking cuttings of all sorts in the language than THE COTTAGE GARDENERS' DICTIONARY, and there is no special book for cuttings at all. Your best plan will be to keep to THE COTTAGE GARDENER, and to write to the Editor about every "fix," till you are as much "up to it" as to be able to teach the best of them, like "THE DOCTOR'S BOY," for instance. Never you mind about bother and all that; you have the value of your money out of these writers, and do not spare them. It is a mere "lark" to them, they are so up to it; and they could write a page while some people would be looking for pen and ink.]

GERANIUMS FOR BEDDING.

"Having noticed in your number for September 23rd Mr. Beaton's observations on Shrubland Park, and particularly on the planting of beds No. 1 to No. 4, but not having the whole of the Geraniums which Mr. Beaton recommends them to be planted with, I have ventured to ask his opinion whether any of the under-mentioned which I have will come near the mark, as I have two oval beds to match each other that I should like planted as near the above system as my plants will admit of my doing. The Geraniums which I have are *Shrubland Pet*, *Tom Thumb*, *Frogmore*, *Trentham*, *Globe Compactum*, *Bishopstow*, *Commander-in-Chief*, and *Cerise Unique*. In Variegated, the old *Scarlet Variegated*, *Mangles*, and *Flower of the Day*; and, from not knowing the habit or colour either of *Punch* or *Shrubland Scarlet*, I cannot tell which plants to select out of those I have that would come nearest to those Mr. Beaton mentions. I therefore should feel very much obliged for his kind advice on the subject. Likewise, if he would inform me if he knows anything of the Geranium *Hydrangea flora*, as I never saw this name in print, either in gardening journals or catalogues. I have some plants so named, which are of a robust habit, with large pink trusses of bloom, very like the *Hydrangea hortensis*; but the centre part of the truss decaying some time previously to the remainder being opened gives it a very dirty appearance.—A YOUNG BEGINNER, T. T."

[*Shrubland Pet* being of the Quercifol or Oak-leaf section will not do so well out with the scarlet breeds as one of their own number, and to have the *Pet* in bloom the whole season you must plant it in the pots. As the *Pet*, however, insists on celibacy, the next best use for which it is worth room is to bloom in-doors from March till June, with a very slight forcing through the month of February. For that purpose it should be cut down about the longest day, and have six weeks' roasting in the old pot out of doors. You must get a more precise name than *Trentham*. There are six or eight kinds of *Trenthams*, and every one of them is good, but different from the rest. *Frogmore* you must never plant in sight of *Tom Thumb*, as *Tom* is an improved *Frogmore*. Your stock will then consist of *Cerise Unique*, *Commander-in-Chief*, *Compactum*, and *Bishopstow Scarlet*, besides the Variegated. The *Commander* will give an idea

of *Punch*, and the colour of *Shrubland Scarlet* is scarlet, of course. The habit of it is such, that as a pillar plant, out on the lawn, it has reached the extraordinary height of eighteen clear feet from the grass in the garden of the Bishop of London at Fulham Palace; therefore, if you put it in a bed with any other sort, or with many sorts, it must occupy the middle of the bed. The habit of *Compactum* commands the same respect. Plant it with ever so many kinds it must have the middle, and is easier to manage there than *Shrubland Scarlet*. All this is in your favour. *Cerise Unique* means Cherry-cheek, and that colour will never do with scarlets, unless you are shading; therefore you must drop *Cerise Unique* in the match beds, which makes the thing more easy still. Now, let us see how we stand. We have *Compactum* for *Shrubland Scarlet*, *Commander-in-Chief* for *Punch*, *Tom* is *Tom* everywhere, and *Bishopstow Scarlet* is the heir-at-law of *Baron Hugel*, unless it was from a twin birth with the *Tidworth Seedling*, or *Reidii*, or *Dazzle*, or *Orion*, or twelve or fifteen other good and lawful children of the said Baron, every one of whom will support the family-title, and their own title to be in the first rank. The rest you know. You have described *Hydrangea flora* to the very letter. It is, however, a good pot-plant for decoration in the spring and autumn, like *Boule de Neige*, *Triomphe de Mont Rouge*, &c.]

STOVE FOR A PLANT ROOM.—ROSE CUTTINGS.

"Will you kindly inform me whether a stove *with* a flue or *without* is best adapted for a room devoted to plants? Also, how slips of Roses ought to be cut, and if there is any chance of the old *yellow* Cabbage Rose growing from slips at this time of the year, and if bottom-heat would be advisable?—A ONE YEAR SUBSCRIBER."

[The stove with a flue to it will be the best. The best cuttings now of Roses are made of short, stubby side-shoots, three or four inches in length, slipped off close to the older stem or shoot. At the point of junction there are many small and inconspicuous buds, and the vital forces are more accumulated there. Make the cut part smooth with a sharp knife, remove the lower leaves, and shorten the upper ones, which will reduce the evaporating surface of the cuttings, and its powers will thus be directed to support itself, and make efforts for extension by putting out roots. Place them in sandy soil beneath a hand-light. Do not give any bottom-heat. You may try such cuttings of the old *yellow* Rose; but we can hold out no great hopes of success. The best sorts to try now are Perpetuals and Chinas.]

FUCHSIA TREATMENT IN AUTUMN.

"I have some *Fuchsias* that have done blooming and are becoming naked: please give me the treatment of them to insure a good bloom next year. Will they want repotting, and at what time must it be done? I am about adding a few *Gloxinias* to my stock of plants: which is the best time to do it? Can you recommend to my notice a good work on the management of Vines? and oblige—A CONSTANT READER."

[Place your *Fuchsias* where they will be safe from frost, cutting off part of the weaker points of shoots, and keeping the roots dryish. About March or the end of February prune back the shoots to short or long spurs, according as you want your plants to grow upright in the bush or wide at bottom in the pyramidal form. If naked at bottom, unless you wish to make standards, you had better cut down altogether, and get a fresh, strong shoot to start afresh with. Water a few days after pruning. When the young shoots are coming away freely, and from one to several inches in length, repot, by getting rid of a good deal of the old soil, and replace in clean similar-sized pots. If the plants are young they will want larger pots in about six weeks. Rich soil and manure-waterings at times will then give you abundance of fine flowers.

It will suit dealers and you, too, to get the *Gloxinias* now, as well as at any other time, for they are not likely to be injured by carriage, and, if struck early, will soon be going to rest, when they must be allowed to become dryish—not dust dry—in the pots, and kept in an average temperature of from 45° to 55°.

Hoare on the Vine is good, especially for out-door culture. Roberts on the Vine is also very good, leaving out filling the borders with horse-flesh and other garbage. Sanders on the Vine is also good, and you will find some good articles in the last and previous volumes of THE COTTAGE GARDENER.]

FORCING IN A NEW HOUSE.—SANVITALIA PROCUMBENS.

"W. C., Brighton, has lately constructed a forcing-house with two beds, which have both upper and under heat by means of hot-water pipes. His gardener tells him it is too late to plant this year, and that he must wait for his crops till early spring. Would the Editor kindly inform him if this is the case; or if not, what will be the best for forcing through the winter? Could Peas be forced through the winter?"

"In No. 403, June 17th, 1856, there is an account of a new bedding-plant, the *Sanvitalia procumbens*. Can I obtain some plants of it, and where? We suffer a good deal from wind, and an early, hardy, free-flowering plant would be a great treasure."

[We should have liked to know how your beds are placed in the house. So far as economy is concerned very likely the gardener is quite right. All forcing is up-hill work before the days begin to lengthen; but, if expense be no object, you could grow *Cucumbers* and *Dwarf Kidney Beans*, planting them now. *Strawberries* might also be introduced by the end of the month, and if the roots have quite filled small pots, 48's, and the buds were well matured, you might expect fruit by the new year. *Peas* may also be grown, but they must not be over-heated. If you have two temperatures in your beds then in the cooler part you could force *Asparagus*, *Potatoes*, *Radishes*, *Mushrooms*, *Rhubarb*, and *Seakale*, by covering the latter.

The *Sanvitalia* is not new; we have pretty beds of it just now, a complete carpet of black and orange. Any nurseryman will supply you with seeds, and you may sow in the open ground in April, or in a slight hotbed, and plant out. We sowed in a little heat in April, and planted out at the end of May, and nothing could well have done better. The planting secures regularity in the bed.]

TO CORRESPONDENTS.

PETUNIA (C. C. C.).—The flowers were spoiled. It is too late now to judge of the merits of out-of-door flowers.

GREENHOUSE (Simplex).—In your case the N. and E. sides may be boarded. Have plenty of doors for ventilation. It will be like a furnace in summer.

DIRECTION (F. H.).—Mr. J. Waterer, American Nursery, Bagshot.

POISON (A. B.).—A druggist may sell poisons without inquiring the purchaser's name. What safety would be gained by the inquiry? Any one intending to commit murder would not hesitate to tell a falsehood. We do not know the paste you mention.

BEES (A Constant Reader, Herts).—In uniting Bees you need not destroy one of the Queens. The Bees do not scruple about being regicides when there is need.

QUERCUS (Conifer).—*Michauxii* is a synonyme of *Q. prinus tomentosa*, and *Q. Skinneri* is a species. We do not know the others. We know of none of the Junipers except *Struthiaceae*; nor do we know why you should write one day under the *nom de plume* of "Conifer" and the next as "Genièvre."

GAS HEATING (R. B.).—The gas might be inclosed in a glass lamp, with a tube from its top to carry off the noxious products, and thus serve both to warm and illuminate your greenhouse.

BEES (Idem).—Bees will work in a box-hive, the bars of which are at right angles across the entrance. It is very easy to try an experiment on stupefying Bees with chloroform. If a dessert-spoonful on a warmed sponge is not enough try a table-spoonful. Our correspondent says that our recipe for Barley-sugar "answers admirably, that is, boiling for thirty minutes, instead of three minutes, as some recipes direct."

FIG-TREE LAYER.—SNAKE CUCUMBER (W. W.).—Separate the layered plant next month, if it is rooted, after the leaves have fallen, and plant it where you desire. The *Snake* Cucumber is too small in diameter in proportion to its length to be handsome enough for exhibition. Its great length renders it objectionable for that purpose, as well as for table use.

AQUARIUM.—"ITALICUS" may have a good aquarium with the bottom of wood instead of slate. We have one that has stood both heat and cold well, the bottom of which is made of red deal, two feet and a half long, and about one inch and a quarter thick, well painted of a marine colour, and varnished. Perhaps wood suits better than either stone or

slate for fixing the frame for the glass. Our frame is of iron, eighteen inches deep and six inches wide, and painted green. The ends are of glass, which looks better than wood. Consult a good glazier respecting the putty or cement to fix the glass, and see that the groove is the proper depth to hold it firm at the bottom.—J. WIGHTON.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

BIRMINGHAM. December 2nd, 3rd, 4th, and 5th. *Sec.*, J. Morgan, jun., Esq. Entries close November 1st.
COLLINGHAM, NEAR NEWARK. Oct. 21st. *Hon. Sec.*, E. Turton, Esq., South Collingham. Entries close Oct. 14th.
ESSEX. At Colchester, 8th, 9th, and 10th of January, 1857. *Secs.*, G. E. Attwood, and W. A. Warwick.
GLOUCESTERSHIRE. Nov. 26th and 27th. *Sec.*, E. Trinder, Esq., Cirencester. Entries close Nov. 1st.
LEOMINSTER. Thursday, October 16.
NOTTINGHAMSHIRE. At Southwell, December 17th and 18th, 1856. *Sec.*, Richard Hawksley, jun. Entries close November 19th.
NOTTINGHAM CENTRAL POULTRY ASSOCIATION. January 13, 14, and 15. *Hon. Sec.* Frank Bottom. *Secretary to the Canary Department*, Jno. Hetherington, jun., Sneinton.
N.B.—Secretaries will oblige us by sending early copies of their lists.

GETTING UP A POULTRY SHOW.

To continue our history of the poultry maladies, their causes, effects, and cures, we shall pursue our inquiry as to exhibitors. There are many predisposing causes; among them, we may name—the glory of one's pets; the glory of self as the owner or breeder; gain; and a spirit of emulation or opposition.

Among the kindest natures in a kindly pursuit are those who view their triumph at a Poultry Show as the triumph of the birds themselves. These exhibitors will not sell at any price. Their birds know them, and on their approach look for the customary extra feed, just as if they were at home. Nor are they deceived. Those we speak of never forget their birds, and we have seen many such stealthily throw a little handful of some curious preparation into the pen every time they passed it. These are always people in easy circumstances, and a stout, smooth, civil man is mostly in charge of, it may be, two pens, each containing three Bantams.

All these fowls are named, and while, in some cases of poultry nomenclature, classical dictionaries are ransacked for Hectors, Sapphos, and Phoenixes, there are always Pets, Romps, Pusses, Polly, Miss Mary, Dick, and so on. These are the best exhibitors; they are easily satisfied; they are people of veracity and high respectability; and they are liberal subscribers; but they are not sufficiently numerous to make a Show, nor do they exhibit many pens. The malady is never very strongly developed in these patients; its cause is a desire for the distinction of their favourites, and the cure is very easy. The illness of one of their fowls is the most effectual remedy, or the assurance of a visitor that exhibition fever is the invariable result of sending them to such places. Frequent unsuccessful attempts will also cure it.

Next we have to do with those who exhibit for their own glory, as breeders or owners. This is a very large class, and forms the mainstay of Exhibitions, because they are living advertisements. They are deeply interested, and they talk continually on the subject. At home they never lose sight of their birds; but the difference between this class and the preceding one is striking, because one is the minister to his birds, and the other views them only as the means of his distinction. In the former class a sick bird would be brought in-doors, and tended as a child; in the latter it will be given in strict charge to a servant. In the former, if the bird died, the owner would give up all idea of exhibiting; in the latter, as soon as the bird was ill, another would be selected to take its place. These are more selfish than the others. They are generally very good judges of their birds, and they form the class most dreaded by the regular Judges. As showing is their delight, and that depends on their success, so anything like failure is closely canvassed by them, and they have a gentlemanly way of asking questions, and a shrewdness (most of them are professional men) which will not be answered by generalities, nor got rid of by the assumption of a little importance. They are looked up to by all parties, because they

form the largest and most useful class of exhibitors. In these patients the disease has no paroxysm, but keeps at one uniform stage. It is very difficult to cure, and usually resists all treatment but the following:—The patient is more than usually successful at a Show; his birds are delivered to him in a dying state, after having been sent to the wrong owner half a dozen times; and on application for his medals, of which he is very proud, he is told "the Show has been unsuccessful, and the committee hope, under the circumstances, he will be good enough to forego them." This cures him for a time.

Our next exhibitor is for gain. Of course, with him it is a real matter of business. He sends a great many birds. He selects them well, and at prices to suit all customers. No man is so eager to know the awards of the Judges, and no man knows so well how to take advantage of success. He is unremitting in his attendance, and never wanders from his own pens. Every thing is with him matter of calculation, and the number of his entries is generally guided by the amount to be paid for each pen. It is no passion with him, and his cure is easy. It suffices for him to take twelve pens to four Shows in succession, and to bring them all away unsold.

The last class enter from a spirit of emulation or competition, or, perhaps, the least taste in the world of jealousy or envy. The boast of a neighbour or an acquaintance, or a disparaging remark on birds of which he thought well, will often induce a man to send one or two pens to a Show. No cure is here required, for the disease does not really exist.

POULTRY AT THE WATERFORD AGRICULTURAL SHOW.

At the second meeting of the "Waterford Farming Society," held in the new Court House grounds of that city, on Wednesday, the 24th of September, in addition to the prizes for bulls, cows, heifers, sheep, boars, and sows, the following were awarded for poultry:—

SPANISH.—P. K. Reid, Esq., Waterford, a Medal.

COCHINS.—P. K. Reid, Esq., Waterford, a Medal. Miss Paul, Mount Alto, Commended.

DORKINGS.—Mr. William Joyce, Abbey Farm, a Medal.

FANCY CHICKENS.—Miss Paul, Mount Alto, a Medal.

AYLESBURY DUCKS.—Major Quentin, a Medal. C. N. Bolton, Esq., Commended.

BEST COLLECTION OF POULTRY.—P. K. Reid, Esq., the Silver Medal.

There were, also, in the yard some remarkably fine Rouen Ducks, the property of Major Quentin, and a pen of Black East Indian Ducks, the property of C. N. Bolton, Esq., which were greatly admired.

BRAHMA POOTRAS.

I HAVE now had Brahmas in my possession for three seasons. I prefer them for vigour of constitution to Dorkings, Spanish, Silver or Golden Hamburgs, or Cochins; all of these I have tried, and have discarded all but the last. By referring to THE COTTAGE GARDENER pages, your readers would find monthly reports as to eggs in a trial I made between Minorcas and Cochins. It was greatly in favour of the latter, both as to weight and number of eggs; and in the 3rd Vol. of POULTRY CHRONICLE is a similar trial between Buff Cochins and Brahmas; this was greatly in favour of the Brahmas as egg-producers. As layers-on of flesh they seem to me to surpass all others, and to my eye they do not yield the palm of beauty to any. For use they stand A 1 with me. As to purity of race, the difficulty will not be solved by ridicule. Would you kindly state what you consider the tests of purity of race in any breed of fowl? I cannot have had less than from 150 to 200 chickens; they are all alike, except that, in some few cases, I have unfeathered legs, and I attribute this to the introduction of a male bird into my yard which was not, to my belief, thorough bred. It never happened last year, when I was certain of my stock, and I have long since killed the gentleman.—J. H.

POULTRY AND PIGEON SALE.

THE first sale of the season took place on Tuesday, October 7. There was a very good selection from F. Edwards, Esq., of Bulstrode, including some *Silver Polands*, several of which fetched from 12s. to a guinea each, and some remarkably good *Silver-spangled Hamburgh pullets*. Good *Cochins* and *Brahmas* were very scarce, and always command fair prices. Two *Cochin hens* produced £2 3s.; and three *Brahma pullets*, from the Rev. F. Thursby, £1 18s.; but indifferent birds do not pay expenses.

The great attraction of the sale was Mr. Bult's annual draft of *Pouters* and *Jacobins*. The former were superb birds, some of the young of this year exceeding seven inches in the length of leg. The twenty birds averaged nearly £1 each.

Of the *Jacobins* it is sufficient to say, one bird was bought by a country dealer at the price of £1, others producing 8s. to 12s. each.

The attendance at the sale was numerous, the *élite* of the *Pigeon* fancy being present, and the prices of all good stock very fair; but we cannot too strongly caution intending sellers against forwarding indifferent *Fowls* or *Pigeons*. No persons, generally speaking, are better judges than the buyers; and bad birds are returned unsold, there being no bidders at 2s. 6d. This was the case with several pairs of *Pigeons* at the sale.

FANCY PIGEONS.—FIRST DIVISION.

CLASS NO. 1.—WATTLED PIGEONS.

THE Wattled or Watted Pigeons comprise the Persian or Turkish Carrier, the Bagdad or Egyptian, with its sub-varieties of Scandaroons, the Barb, and the English Carrier, with its varieties of Horsemen and Dragoons, all of which are long-bodied Pigeons, with coarse feet, longish necks, broad shoulders, close-feathered, and have more or less of wattle on the beak, and cere round the eyes. Thus, it appears, they all bear some resemblance to each other, while the points of difference which mark the respective breeds are, variation in length of beak, quantity or form of wattle, length of limbs, and the ridgedness or rotundity of body, which, as these points are capable of being altered by various breeding, their diversity on these points does not prove their original diversity. Thus I conclude that all the Wattled Pigeons are in some measure connected, although altered by breeding and other circumstances, and so, through the lapse of years, forming several distinct breeds.

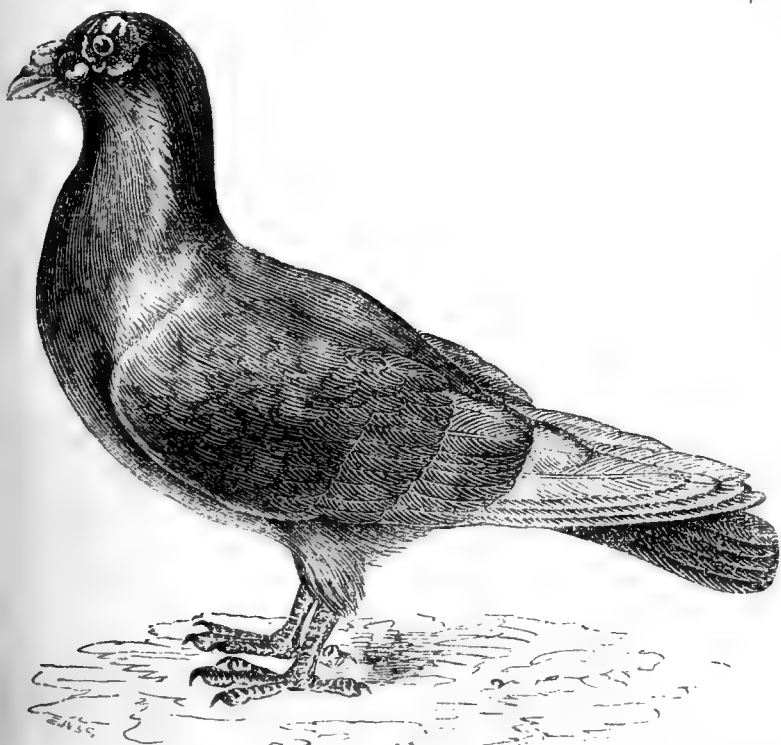
VARIETY 1.—THE PERSIAN OR TURKISH PIGEON.

French.

PIGEON TURC.

German.

TURKISCHE TAUBE.



This is so called because, according to former writers, it was brought from those countries, where they were much used and employed as messengers, or carriers of intelligence.

Aldrovandus describes the *Columbas Persicas et Turcicas* as being of a russet-brown colour, except the eyes, which are vermilion; feet pale red, and beak light yellow. His plate represents a Pigeon much like an English Carrier in form, but having a short beak, and but little wattle. Beckstein also describes the *Turkische Taube* as having a middle-sized beak, as being wattled, and having a naked circle round the eyes; that they are large and fruitful, and mostly of a black colour. He calls them, also, Persian or Arabian Pigeons, because they came originally from that neighbourhood.

BRIDGNORTH POULTRY EXHIBITION.

HELD on the 9th inst., E. Hewitt, Esq., Eden Cottage, Sparkbrook, near Birmingham, acted as Judge. We must reserve our notes on this and on the Worcestershire Show until next week.

COCHIN CHINA (Any colour except White or Black).—First, Messrs. Peters and Wildman, 101, High Street, Birmingham. Second, Mr. Joseph Busst, jun., Walsall. Highly Commended.—Mr. William Dawson, Hopton Mirfield. Commended.—Mr. Thomas Hineks, Penkridge. Mr. John R. Rodbard, Aldwick Court, Langford, near Bristol. (Partridge.) (An exceedingly good class.)

COCHIN CHINA (White or Black).—First, Messrs. Peters and Wildman, 101, High Street, Birmingham. (White.) Second, Mr. George Lamb, Tettenhall Wood, near Wolverhampton. (White.) Highly Commended.—Mr. George Lamb, Tettenham Wood, near Wolverhampton.

DORKINGS.—First, Mr. Edward Archer, Malvern. Second, Mr. Joseph Whittington, Wootton Waven, near Henley-in-Arden. Highly Commended.—Mr. John Miere, Brockton House, near Shiffnal. The Hon. and Rev. George T. O. Bridgman, Blymhill Rectory, near Shiffnal. Miss Steele Perkins, Sutton Colefield, near Birmingham. Mr. J. E. Wilson, Clifton Cottage, Claverley, near Bridgnorth. Commended.—The Countess of Chesterfield, Bretby Hall. Mr. John Hopkins, Higford, near Shiffnal. (White.) Mr. J. Whittington, Wootton Waven, near Henley-in-Arden.

GAME.—First, Mr. John R. Rodbard, Aldwick Court, Langford, near Bristol. Second, The Countess of Chesterfield, Bretby Hall. Highly Commended.—Mr. Edward W. Haslewood, Bridgnorth. Commended.—Mr. Henry Hill, Stableford, near Bridgnorth. Mr. Josiah B. Chune, Coalbrookdale.

HAMBURGS (Golden-pencilled).—First, Mr. Edward Archer, Malvern. Second, Mr. Josiah B. Chune, Coalbrookdale. Commended.—Mr. Arthur George Brook, Cumberland Street, Woodbridge, Suffolk. Mr. Edward W. Haslewood, Bridgnorth.

HAMBURGS (Golden-spangled).—First, Miss E. Steele Perkins, Sutton Colefield, near Birmingham. Second, Mr. Bamforth, Holmfirth, near Huddersfield.

HAMBURGS (Silver-pencilled).—First, Mr. Josiah B. Chune, Coalbrookdale. Second, Mr. Edward Archer, Malvern.

HAMBURGS (Silver-spangled).—First and Second, Mr. Josiah B. Chune, Coalbrookdale. Commended.—Mr. Edward Archer, Malvern. Mr. Bamforth, Holmfirth, near Huddersfield. Mr. Edward W. Haslewood, Bridgnorth.

POLANDS (Black with White Crests).—First, Mr. E. W. Haslewood, Bridgnorth. Second, Mr. John R. Rodbard, Aldwick Court, Langford, near Bristol. Highly Commended.—Mr. Bamforth, Holmfirth, near Huddersfield.

POLANDS (Golden-spangled).—First and Second, Mr. E. W. Haslewood, Bridgnorth.

POLANDS (Silver-spangled).—First, Mr. Joseph Whittington, Wootton Waven, near Henley-in-Arden. Second, Mr. John Hopkins, Higford, near Shiffnal. Commended.—Mr. E. W. Haslewood, Bridgnorth.

SPANISH.—First, Mr. John R. Rodbard, Aldwick Court, Langford, near Bristol. Second, Mr. Joseph Whittington, Wootton Waven, near Henley-in-Arden. Commended.—Mr. John Hopkins, Higford, near Shiffnal. Mr. Joseph Busst, jun., Walsall. (A very superior class.)

BANTAMS.—First, Miss Steele Perkins, Sutton Colefield, near Birmingham. (Black Bantams.) Second, Messrs. Peters and Wildman, 101, High Street, Birmingham. (Silver-laced Bantams.) Highly Commended.—Mr. Edward Archer, Malvern. (Gold-laced Bantams.) (The Bantams all very good.)

ANY OTHER VARIETY.—First, Mr. William Dawson, Hopton Mirfield, Yorkshire. (Sultan's Fowls.) Second, The Countess of Chesterfield, Bretby Hall, near Burton-upon-Trent. (Brahma Pootra.) Highly Commended.—Messrs. Peters and Wildman, 101, High Street, Birmingham. (Serai Taook or Sultan's Fowls.)

TURKEYS.—First, Mr. John R. Rodbard, Aldwick Court, Langford, near Bristol. (Cambridge Turkeys.) Second, The Countess of Chesterfield, Bretby Hall. Commended, Mr. George Pritchard, Brosely.

GESE.—First, The Countess of Chesterfield, Bretby Hall. (White.) Second, Mr. E. B. Reese, Harpswood, near Bridgnorth. Highly Commended.—Mr. E. B. Reese, Harpswood, near Bridgnorth.

Ducks (Aylesbury).—First, Mr. H. Smith, Sutton Maddock, near Shiffnal. Second, Messrs. Peters and Wildman, 101, High Street, Birmingham. Commended.—The Earl of Dartmouth, Patshull. Mr. J. E. Wilson, Clifton Cottage, Claverley, near Bridgnorth. (An unusually good class.)

Ducks (Rouen).—First, Mr. John Rodbard, Aldwick Court, Langford, near Bristol. Second, Mr. E. W. Haslewood, Bridgnorth.

Ducks (Any other variety).—First, Messrs. Peters and Wildman, 101, High Street, Birmingham. Second, Miss Steele Perkins, Sutton Colefield, near Birmingham.

WORCESTERSHIRE POULTRY SHOW.

HELD October 3rd and 4th. Judge, Mr. J. Baily, Mount Street, Grosvenor Square, London.

THE SILVER CUP for the best Collection of Poultry, to Mr. Edward Archer, of Malvern; Pens 2, 17, 31, 34, 37, 38, 39, 40, 58, 59.

DORKINGS (Coloured).—First, Mr. Edward Archer, Malvern. Second, Mr. C. R. Titterton, Kingsnorton. Highly Commended.—Mrs. E. Herbert, Powick.

WHITE DORKINGS.—First, Mr. John Skey. Second, Miss Clifton.

SPANISH.—First, Mr. C. R. Titterton, Kingsnorton. Second, Mr. John Holloway.

COCHINS (Cinnamon or Buff).—First, Mr. R. Chase, Moseley Road. Second, Mrs. E. Herbert, Powick. Highly Commended.—Mr. C. R. Titterton, Kingsnorton.

COCHINS (Any other variety).—First and Second, Mrs. E. Herbert, Powick. Highly Commended.—Mr. R. Chase, Moseley Road.

GAME (Red).—First and Second, Mr. E. H. France, Ham Hill, Powick. Highly Commended.—Mr. H. Horton, St. Swithin Street.

HAMBURGH (Spangled).—First, Mr. E. Archer, Malvern. Second, no prize awarded.

HAMBURGH (Pencilled).—First and Second, Mr. E. Archer, Malvern.

POLAND (Gold and Silver-spangled).—First, Mrs. B. Blay, St. George's Square. Second, Mr. Joseph Wood, Droitwich. Highly Commended.—Mr. Joseph Wood, Droitwich.

POLAND (Black with White Crests).—First, Mr. E. B. Guest, Broadwas. (No second prize awarded.)

ANY OTHER VARIETY.—First, Mr. E. B. Guest, Broadwas. (Cross between Cochins and Brahmas.) Second, Mr. C. R. Titterton, Kingsnorton. (Brahmas.) Highly Commended.—Mr. Joseph Wood, Droitwich. (Sultan Fowls.)

BANTAMS (Sebright).—First, Mr. E. Archer, Malvern. Second, Mr. R. Chase, Moseley Road. Highly Commended.—Mr. E. Archer, Malvern.

BANTAMS (Any other variety).—First, Mrs. G. Finch, Worcester. Second, Mr. H. B. Clarke, Malvern.

GESE.—First, Mr. George McCann, Malvern. Second, Mr. William Cooke, Malvern. Highly Commended.—Miss A. Walker, Wittington. Mr. E. Perrins, Hanley Castle.

TURKEYS.—First, Mr. Joseph Wood, Droitwich. Second, Mr. William Moore, Hanley Castle. Highly Commended.—Mr. William Moore, Hanley Castle.

DUCKS (Aylesbury).—First, Mr. Thomas Brown, Upton. Second, Mrs. John Herbert, Powick.

DUCKS (Any other variety).—First, Miss Clifton, Wittington. Second, Mr. E. H. France, Powick. Highly Commended.—Mr. E. H. France, Powick. Mrs. E. Herbert, Powick.

COTTAGERS.—(Dorkings).—First, James Vaughan, Malvern. (Black Game).—First, Joseph Tomkins, Malvern. Second, John Wood, Droitwich. (Calcutta Bantams).—Second, John Wood, Droitwich. (Golden-pencilled Hamburg).—First and Second, John Martin, Northwich Terrace.

EXHIBITION TRICKS.—At a recent Show in a northern county a prize was given for eggs, and was won by one of the Judges. When, however, one of the prize eggs was broken, the *bouquet* was so strong that it converted all the water in the village into "Harrogate!" It was then found that the eggs had made their appearance at a succession of Shows, and had "addled" their owner no end of prizes. Every nose was turned up at the offensive act.—(*Gateshead Observer.*)

OUR LETTER BOX.

POULTRY CHARACTERISTICS.—BRAHMA POOTRAS.—"Will you oblige me by informing me what is the Poultry Book for amateurs and others to be guided by? I find, on visiting Poultry Shows, that I can scarcely determine why one pen is better than another, and I want to know how I can be acquainted with this important fact. Your opinion will be highly esteemed.

"In your last number, September 23rd, is a letter by 'EXPERIENTIA,' praising 'Brahma Pootras.' I fully agree with him. I keep them; they are capital layers, especially in the winter, but requiring good and abundant food; they are also good for the table. But I would ask you, Sir, to kindly inform me what are the characteristic marks of a pure-bred light *Brahma Pootra*, that I may know whether or not my own are nearly if not first class.—NON-EXPERIENTIA."

[We believe Mr. Baily's book on "Fowls" will give the information you require with the least trouble and searching. The last pages of that work are devoted to Exhibition fowls, and detail the imperative requirements of Judges.]

Mr. Baily agrees with you in approving the *Brahma Pootras*. After a long trial he thinks them a valuable breed, excellent layers, good mothers, good for the table, and making a fair return in every way for the food they consume. We have not received from Mr. Baily the characteristics of this variety, and we confess ourselves unable to reconcile the clashing decisions we have noticed.]

"SOAPING PIGEONS' WINGS."—A short time ago, in *THE COTTAGE GARDENER*, it was recommended to soap Pigeons' wings to prevent them flying away. I did so, accordingly, to some of my valuable ones, viz., 'Owls,' not wishing to lose them; but not finding that the soap came off with the wet, I washed their wings the day before yesterday in warm water, which removed it entirely; but, to my amazement, none of them can fly. You would greatly oblige several of your readers if you could state the reason, as I am not the only sufferer.—O. GREY."

[If the wings are so rubbed with soap as to destroy the texture of the feathers the birds are afterwards incapable of flight; but if it is only lightly and properly applied, it is washed off, and the power of flight regained in the course of a few days. I have this day thrown up a Pigeon more than a mile from home, whose wings were soaped less than six weeks since.—W. B. T.]

LONDON MARKETS.—OCTOBER 13TH.

COVENT GARDEN.

The supply of home-grown fruit remains limited, and the last few days have been very unfavourable for getting it to market. We have, however, received the usual course of consignments from the Continent, and also some *Peaches* from Rotterdam, with several hundred packages of Blue and White *Grapes* in a fair condition, realising from 1s. to 1s. 6d. per lb. The *Potato* trade is heavy, prices lower.

FRUIT.

Apples, kitchen, per bushel.....	8s. to 12s.	Parsnips, per doz.....	6d. to 9d.
"dessert.....	12s. ,, 20s.	Beet, per doz.....	1s. to 1s 6d.
Pears, per dozen....	1s. ,, 3s.	Potatoes, per cwt.....	3s. to 6s.
Peaches, per doz....	6s. ,, 10s.	"Frame, per lb.....	0d. ,, 0d.
Nectarines, do.....	6s. ,, 10s.	"New, per lb.....	0d. ,, 0d.
Pine-apples, per lb....	4s. ,, 6s.	Onions, Y'ng, per b'nch.....	4d. ,, 6d.
Hothouse Grapes, per lb.....	3s. ,, 6s.	"Old, per bushel.....	0s. ,, 0s.
Strawberries, per lb.....	0d. ,, 0s.	Turnips, per bunch.....	3d. ,, 6d.
Foreign Melons, each.....	1s. ,, 3s.	Leeks, per bunch.....	2d. ,, 3d.
English Melons.....	1s. ,, 4s.	Garlic, per lb.....	6d. ,, 8d.
Morello Cherries, per lb.....	1s. ,, 2s.	Horseradish, per bundle.....	1s. 6d. to 2s. 6d.
Cherries, per lb.....	0d. ,, 0s.	Shallots, per lb.....	6d. to 1s.
Oranges, per 100.....	10s. ,, 20s.	Lettuce, Cos, per score.....	1s. ,, 2s.
Seville Oranges, do.....	0s. ,, 0s.	" Cabbage, per doz.....	0d. ,, 3d.
Lemons.....	10s. ,, 15s.	Endive, per score.....	0s. 0d. ,, 0s.
Almonds, per lb.....	9d. ,, 1s.	Celery, per bunch.....	9d. to 1s. 6d.
Nuts, Filberts, per lb.....	9d. ,, 1s.	Radishes, Turnip, per dozen bunches.....	— to 6d.
" Cobs, ditto.....	9d. ,, 1s.	Water Cresses, ditto.....	6d. ,, 9d.
" Barcelona, per bushel.....	20s. ,, 22s.	Small Salad, per punnet.....	2d. ,, 3d.
Nuts, Brazil, ditto.....	12s. ,, 14s.	Artichokes, per lb.....	— ,, 2d.
Walnuts, per 1000.....	9s. ,, 12s.	Asparagus, per bdl.....	0s. ,, 0s.
Chestnuts, per bushel.....	0s. ,, 0s.	Sea-kale, per punnet.....	— ,, —

VEGETABLES.

Cabbages, per doz.....	1s. to 1s. 6d.	HERBS.	
"Red, per doz.....	2s. to 4s.	Basil, per bunch.....	4d. to 6d.
Cauliflowers, each.....	2d. ,, 4d.	Marjoram, per bunch.....	4d. ,, 6d.
Brocoli, per bdl.....	0d. ,, 0d.	Fennel, per bunch.....	2d. ,, 3d.
Savoy.....	0s. ,, 0s.	Savory, per bunch.....	2d. ,, 3d.
Greens, per doz. bunch.....	2s. ,, 4s.	Thyme, per bunch.....	2d. ,, 3d.
Spinach, per sieve.....	— ,, 4s.	Parsley, per bunch.....	2d. ,, 3d.
French Peas, per bshl.....	0s. ,, 0s.	Mint, per bunch.....	2d. ,, 4d.
French Beans, per hlf. sv.....	1s. 6d.	Green Mint.....	6d. ,, 8d.
Carrots, per bunch.....	4d. to 6d.		

POULTRY.

We are still jotting on without much variety. If anything, the supply is rather above the demand.

Large Fowls.....	5s. 0d. to 5s. 6d. each.	Hares.....	2s. 9d. to 3s. 0d. each.
Smaller do.....	3s. 6d. to 4s. 0d. ,,	Ducks.....	2s. 9d. to 3s. 3d. ,,
Chickens.....	1s. 9d. to 2s. 9d. ,,	Geese.....	6s. 0d. to 7s. 0d. ,,
Grouse.....	2s. 0d. to 2s. 3d. ,,	Pigeons.....	8d. to 9d. ,,
Partridges.....	1s. 6d. to 1s. 9d. ,,	Rabbits.....	1s. 5d. to 1s. 6d. ,,
Pheasants.....	3s. 6d. to 4s. ,,	Wild ditto.....	10d. to 1s. ,,

WEEKLY CALENDAR.

Day of Month.	Day of Week.	OCTOBER 21—27, 1856.	WEATHER NEAR LONDON IN 1855.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
21	Tu	Sun's declination, 10° 53' s.	30.169—30.089	62—45	S.W.	.00	37 a 6	53 a 4	11 9	22	15 21	295
22	W	Woodcock arrives.	30.188—30.045	66—46	S.W.	.00	39	51	morn.	23	15 30	296
23	Th	Wild duck arrives.	29.966—29.841	61—40	S.W.	.01	40	49	0 25	24	15 38	297
24	F	The scarce umber Moth.	30.052—29.901	55—33	W.	.00	42	47	1 39	25	15 46	298
25	S	The mottled umber Moth.	29.961—29.545	55—50	S.W.	.38	44	45	2 50	26	15 52	299
26	SUN	23 SUNDAY AFTER TRINITY.	29.202—29.121	56—31	S.W.	.28	46	43	3 38	27	15 58	300
27	M	The red green carpet Moth.	29.639—29.344	54—26	S.W.	.00	47	41	5 8	28	16 3	301

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 56.4°, and 39.7°, respectively. The greatest heat, 73°, occurred on the 21st, in 1830; and the lowest cold, 20°, on the 21st, in 1842. During the period 97 days were fine, and on 99 rain fell.

RECOLLECTIONS OF THE GARDENS AT DALKEITH PALACE.

I HAVE had so many inquiries respecting this celebrated place, that to avoid the trouble of writing private letters, I shall transcribe a few of the reminiscences of my visit in the month of May, premising, however, that instead of anything like a general description, I will merely select a few salient points that may be generally interesting.

The palace and gardens are situated quite close to the town of Dalkeith. The kitchen-gardens are very large, and possess great varieties of exposure and inclination, bounded by good walls and other fences. I noticed a fine border of *early Potatoes* that had been saved from frost by throwing a thin covering over them, supported by rails, while all the rest had been cut down to the surface of the soil. The produce of that border would well compete with the latest crops under glass, and with those forwarded in hotbeds, with arched rods and mats placed over them. When I have frequently read of early Potatoes from the open ground in the Edinburgh market, I have often asked myself, "Had these no protection?" because, if not, the climate there, in favoured spots, must either be better than ours, or we must go north again to learn "how to do it." Here, as well as in most large places in Scotland, much of the cropping ground was as yet in a fallow state, the chief demands upon the gardens being from the end of July and onwards through the winter and early spring.

There are something like villages of houses and pits, all of them useful, though many of them wanting in the light gracefulness of more modern structures. A long range of cold pits were chiefly filled with a fine collection of alpine plants, undergoing a complete overhauling and necessary arrangement for the summer. What an admirable chance for trying duplicates and triplicates on rockeries and rooteries! Many would be glad of such cold pits for placing their younger greenhouse plants in in summer. The greenhouses and conservatories were, if anything, overstocked with large plants of Camellias, &c., that Mr. Thompson wished to get rid of, in order to obtain due space for younger plants, and newer and better varieties. The water-plants in the aquarium, and the Orchids in their neighbourhood, were in the highest luxuriance. I mentioned, the other day, when alluding to the plants in the nave of the Crystal Palace, how beautiful young *Geranium plants* looked here in the middle of May placed on level platforms in a low house, and at a considerable distance from the glass. These beautiful, compact, semi-globular plants, with healthy, small foliage, and the shoots beginning to bristle with stiff-stalked flower-buds, were all cuttings of the previous summer. I did not observe whether they had ligatures about them or not; but I saw nothing in the shape of stakes. Very probably, in this respect, Mr. Thompson means to take a lesson from his former pupil and younger brother at Dyrham Park, whose huge *Geraniums*, without tie or support, created such a sensa-

tion at the Regent's Park Exhibition. In a neighbouring house were some beautiful Azaleas and Cinerarias in bloom.

Among the many soft-wooded plants I noticed, and grown chiefly since Mr. Thompson's induction to the gardens, next, if not equally to these Unique *Geraniums*, I was most delighted with great masses of *semi-shrubby Calceolarias*, grown chiefly in six-inch pots, and of much the same strain as Mr. Thompson used to grow them at Wrotham Park many years ago. Many of these plants had such large, fine-textured, beautiful-coloured, fine-formed flowers as would have satisfied the refined tastes of a Turner or a Kinghorn. Others, though gorgeous and producing large panicles of bloom, were not such as a florist would thoroughly approve. A distinguishing characteristic of all, even those inclined most to the herbaceous in habit, was the rich, healthy foliage, not only hanging over the sides of the pot, but clothing the branches, and, in many instances, forming a background for the beautiful flowers. A number of years ago, through Mr. Thompson's kindness, I cultivated very successfully the same strain; but I could not let well alone—I must improve the quality of the flower; and that I likewise managed, at the expense of making the plants so tender, that I was beaten in attempting to keep them on by cuttings, while they became so barren I could not get a seed from them. I have had many strains since then, but none that altogether yielded an equal amount of satisfaction. As a general rule, ladies and gentlemen do not trouble themselves with the niceties of florists; what they want are healthy-looking plants and masses of bloom. Compared with such healthy plants the bundles of whittled sticks with stray blooms fastened to the points of them, and the few leaves remaining of a yellow, sickly hue, as frequently seen on exhibition tables, are enough to put *Calceolarias* out of fashion, and to give a fit of the *hyps* to every beholder. Much of this skeleton work might be avoided were the lovers of these plants contented to give them less of their coddling, less pot room for blooming in, unless huge specimens are desired, less heat and dryness in the atmosphere, and more coolness and moisture at the roots. These plants at Dalkeith were chiefly placed on level platforms on each side of a pathway in a house facing the north, or thereabouts, with plenty of air in the house, and the platforms and the floor of the house kept moist. After the sun gains power a somewhat shaded position is best for them, and every effort should be made to keep the roots moist and cool, though there must be no stagnant water. I have seen water used in May hot enough to suit a Pine plant growing in a bottom-heat of from 80° to 90°; but such kindness is just the prelude to sickness, hosts of green fly, and the spending of money for tobacco, with the general result of leaving plants and insects pretty much alike as to a healthy vitality.

The *Pine-apple* plants were in excellent order, and in such numbers as to remind one of a mercantile establishment for supplying a metropolitan market. They are.

however, to be considerably reduced, and more space given to Vines, as the supply of Grapes is not equal to the demand for them. In the mean time, a considerable number of Vines were fruiting in pots and doing well, while a great number of young plants were growing vigorously in every conceivable open position in the houses, upwards in front, and downwards from the shelves at the back, where there was not sufficient space to grow upwards, and all looking as if, after another shift or two, they would make good fruiting plants for the next season, or be strong plants for furnishing fresh Vineries. With the exception of the roots getting too deep, there seems to be comparatively little trouble in making Vine borders, draining being next to entirely dispensed with, owing to the openness of the subsoil.

Pruning and Transplanting Vines in Summer.—Without entering into details respecting these many houses, I will mention the treatment of one Vinery last season, not only for its peculiar singularity and the success attending it, but also as showing that there are gardeners among us who can and will think for themselves, and thus see their way clearly, when necessary, to break through established custom and routine. Writing from memory, I do not pretend to give the exact dates, but, if far wrong, I am sure that Mr. Thompson will put me right. Dissatisfied with the appearance of this Vinery, about the 25th of May, 1855, he cut the main shoots back for the greater part of their length, leaving only a few side-shoots with fruit on them near the base. In the first week of May, and again in the second week, as operations were stayed on account of rainy weather, the roots of the Vines were examined, were found to be deep, long, and straggling, and bare of healthy fibres, were lifted, pruned back rather freely, and planted afresh in new soil in a ridge about the third of the width of the border; an additional width was to be given during this summer. Whilst the raising and replanting were going on not a leaf, to say nothing of a bunch on the Vines, was allowed to flag or shrivel. They were treated, in fact, something like cuttings under a bell-glass. The house was thickly shaded in sunshine, a moist heat maintained inside, and a frequent use of the syringe put in requisition, in order that the whole powers of the plants should be directed to additions upwards and downwards, instead of their juices being wasted by evaporation. Under such treatment the leaves were more of an auxiliary than otherwise, just as doubtful allies may be forced to do good service when the enemy is before them and a double row of bayonets behind them. The least carelessness in shading, the least remissness in securing a moist atmosphere, would have changed each of these leaves into an active, exhausting, destructive enemy. Even amateur propagators know that the number and size of leaves upon a cutting are an advantage or the reverse, just in proportion to the means at command for keeping these leaves healthy, and forcing them to absorb rather more than perspire. I forget what, but, most likely, some simple means were used for preventing the heat given to the soil from the sun radiating away again at night; but, ere long, fresh wood began to push, and fresh fibres to work freely in the new soil; and, of course, as soon as the plants would bear it, the shading was altogether, but by degrees, discontinued. So well did this unusual course answer, that Grapes ripened on the side-bearing shoots not cut away were placed before Her Majesty in Edinburgh last year; and so good and thoroughly ripened was the wood thus formed after the stems were lopped back in the end of May, and the roots taken up, pruned, and replanted in June, that, when I saw this house in the middle of May this year, there was a beautiful crop of Grapes all over it from top to bottom, ready to commence their last swelling, with fine healthy wood for another year. I was privileged to see another Vinery

at Dalkeith, that did not at all please the gardener, undergoing a similar process just then, and I shall be glad to know how the plan has answered. I lately recommended lifting Vines, where the roots were too deep, as early as possible in autumn, and that will generally be the safest time. There can, however, be no question that, if not involving a present sacrifice in other respects, May or June would be a good time as respects the following year, as then the fine weather would be all before us, and the plants full of vital energy. There can be no question of the result under Mr. Thompson's management, though I understand many of the wise ones shrugged their shoulders, and prophesied downright failure and ruin. Our readers will comprehend the main principles on which such operations were based. The whole *rationale* must have been clear as demonstration to the operator before he commenced such a work in a new situation, and in, at least, what used to be, the premier gardens of Scotland, well aware that curiosity would watch, and rumour with her many tongues report, his doings; and I am sure I only express the sentiments of many in hoping we may have an account of the whole affair, reasons and operations, from his own pen.

Thompson's Corrugated Boiler.—The engrossing subject of heating formed matter for gossip and discussion. I still would give the same modified approval to Weeks' system I expressed in these pages. Mr. Thompson, who has had great practical experience in these matters, does not consider Weeks' boiler equal in power and efficiency to one of his own designing. With this boiler he heats easily from 1100 to 1200 feet of four-inch pipe in a long range, consisting of tropical aquarium, plant-stove, greenhouses, &c., the farther end being the small Geranium-house referred to; and this, the foreman assured me, could be heated in fifteen minutes from the lighting of the fire. To do this work formerly six boilers and furnaces were required. The saving in attendance and fuel is great. The boiler may be described as a conical saddle-backed one. It is four feet and a half long, and three feet in height. I forget the width, but wide enough to permit a flue or open space of some eight inches in diameter to pass through the upper part of it for the whole length of the boiler, thus dividing the boiler, as it were, into two. By means of the corrugated sides exposed to the direct action of the fire, the passage of heat through this pipe, as well as all round the outsides and over the top, a large surface is exposed to the action of the heat, and no great depth or width of water can be lodged in any one place. Some time ago a simple plan for carrying out a similar principle was exemplified in these pages, by joining two boilers together by means of a pipe between them, which made all the space between, with the exception of the pipe, a flue. Mr. Thompson's boiler is all of a piece. Some readers may wonder what *corrugating* is, and how it increases the surface exposed to the fire. The word is borrowed from a Latin verb signifying to wrinkle. The muscle that draws fair brows at times into deep wrinkled seams and ridges is called a *corrugator*. It would be Vandalism to compare a lady's brow at any time to the sides of a cast metal boiler; but if she would take a pretty collar, with its outside circumference rather deeply indented with narrow rounded vandykes, she will at once see something of the outline of the lower side of Mr. Thompson's boiler. Mr. Thompson showed me other designs of boilers, with two or three pipes passing through them, and furnished with caps to clean them in a moment when necessary.

I had just written thus far when, casting my eye on a file of advertisements, I find that *Thompson's Retort Boilers* are manufactured by a tradesman at Dalkeith, and that all directions about them and general remarks on boilers may be obtained from himself by a letter containing two postage stamps.

Architectural Conservatory.—There is nothing of the artistic attempted in the glass structures in these gardens; but in a vale, surrounded by a nice furnished lawn, is a pretty pavilioned sort of a temple, called a conservatory. I recollect admiring it hugely when I called at Dalkeith in my apprentice days. It is beautiful now as an architectural structure. As a residence for plants it is good for preparing them for hospital treatment. For the expense such a building must have cost I have no doubt that Mr. Thompson could erect a miniature Crystal Palace; but in those days it had been the custom, even as it is too much the case now, to take the opinion of everybody on plant-houses except those who had made it a life study to know what was wanted in the way of fitness and appropriateness.

Flower-gardening.—Considering the number of plants grown in pots, the extent of the gardens, and the grandeur of the demesne, the flower-gardening, for all that is of it, may be said yet to be commenced. On the south side of the kitchen-garden, I think, is a large space devoted to a systematic arrangement of herbaceous plants, bounded by a Laurel fence to the south, and by a walk on the north separating it from the border in front of the wall. That border Mr. Thompson has laid out in small beds, with Box edgings and gravel, seemingly for low bedding-plants. The plan may be said to have been dividing the length of the border into oblong squares of equal size, and then each square into five by a circle in the middle, and four figures at the four angles. There would thus be a row of circles in the centre of the border. I should like to know how it was planted. Ribboning such a border would have had a fine effect without laying it out. I rather think contrasting one square of five figures with the next square would be best; but I am not at all certain. However done, I have no doubt it would be gay, and, if the whole of the herbaceous ground was thrown into a parterre, it would have a grand effect from the background of Laurels.

Considering, however, that herbaceous plants are so little attended to in these grouping days, it would be a pity to disturb them, for their turn to be in the fashion will be sure to come ere long, and we should be more inclined to let them alone, because, on the east side of the garden, is a large space of rough glass with nothing on it, with a deep incline, just as if it was placed there on purpose for a series of terraces. A walk goes round, leaving a border next the wall as on the south side; between that walk and the top of the grass *brae* is a level space, on which is placed a beautiful-patterned Box garden; but, as being neither sunk in a panel nor shut in by a fence of any kind, looking as if it had dropped there promiscuously, having no connection or blending with anything whatever in its neighbourhood. I think I must have had a three minutes' doze in the 'bus to Edinburgh; but I either saw, or thought I saw, that Mr. Thompson had made the east wall more ornamental, and graced it with fine plants; had laid out the east border in the same style as he had done the south one; had widened the walk; had removed the Box pattern, and placed it on a narrow terrace of turf sunk in a panel, and bounded and filled with all sorts of pretty-coloured sands and little shells; and farther down the *brae* had another wider terrace or two for the hardiest bedding-plants, while vases and statues lent their charms to the scene.

Had I not exceeded my space, I would have taken the reader with me, eastwards from the gardens, along a beautiful walk on the top of a deep, well-planted dell, called the *Haugh*, with the north Esk rolling its waters at the bottom; onwards and southwards to a noble bridge, from which, looking westward, the massive castle palace stands before you on an elevated plateau, a spire on the north side, and another on the south side

from the Dalkeith churches, breaking the sky outline; while the massy walls of the palace are relieved by creeping Ivy, and the foreground brightened by fine specimens of Holly and Portugal Laurel, and great masses of layered and cut Laurel on steep banks shelving down to the river. Or, standing still on that bridge, we might have discussed how terraced gardens would have looked on the steep banks of the Haugh opposite the mansion, recalling something of the lesser beauties of valley-field in its palmy days, and the greater grandeur of the enchanted vale at Alton Towers. Or, if fond of fine timber, we might have traversed the deer park, the extensive drives, and some of the forty miles of walks; but, at present, I will conclude with two facts, feeling certain they will speak for themselves.

Going from the bridge to the palace you come on a spacious lawn in front of it. To that lawn and a great portion of the demesne the population of the neighbourhood have access at all times, and, without the ceremony of solicitation, may come and walk, and golf and cricket to their heart's content. Need we wonder that between such proprietors and their humbler neighbours such a kind, sympathetic, trusting clanship should exist to the benefit of all concerned?

Observing a beautiful edition of the works of Dr. Chalmers on Mr. Thompson's parlour table, I was permitted to read a written paper, stating that these volumes were presented by the working men at Wrotham Park, as a small token of their great respect for him, and their deep regret at his leaving them. The address was written and read by one of themselves, and, in its clear, forcible, graphic language, and its enunciation of sterling principles, gave evidence that working men could rightly estimate the advantage of being superintended by a man who combined courtesy and kindness with firmness to them, yet with a strict attention to, and inflexible integrity towards, the interests of his employer. While thanking him and his family for their attention to their temporal comforts; for his seeing they received a due remuneration for their labour; for his anxieties and efforts to elevate them as rational and moral beings; they seemed to me as if they could not thank him enough for teaching them the value of self-dependence, and what they themselves could accomplish in securing comfort and happiness by means of temperance and self-denial. Such an intelligent document it has rarely been my privilege to see coming from working men. I fear few gardeners possess such a document. I fear still more that few of us act so as to deserve it. My apology for mentioning it is the hope that many of us may be encouraged to commence and persevere in doing likewise.

R. FISH.

FIGS, REMARKS CONCERNING THEM.

WE have received the following inquiries from a Devonian, whose letter is subscribed "SALTERTON;" and I feel assured that they will be perused with much interest by the readers of THE COTTAGE GARDENER:—

"I take the liberty of asking your opinion respecting the expediency of rubbing off the second crop of Figs. I have two fine standard trees of a large, luscious, white Fig, which bear a scanty crop of the early fruit, but a most abundant one of the second, and though these often stand the winter, they do but rarely ripen. A close neighbour of mine has a tree now covered with such Figs as I have rarely met either in Italy or the south of France, the fruit nearly resembling that of my trees; but this tree never bears but one crop, which appears before the leaf. My friend raised his tree from seed, and I almost doubt its being equalled in any part of England. I remember having had all the young Figs from my trees rubbed off one year, and that the crop was more abundant the next.

"There is a something, either in our soil or climate, which suits the culture of the Fig and out-of-door Grapes. I have some now in my little garden which would not disgrace a greenhouse, although only under the management of a common labouring gardener, who has very little of the appliances of scientific gardening; Cucumbers of large size and good flavour, Tomatoes, and Capsicums, all without a frame; Magnolias in excellent bloom, all in the open ground, in which our Geraniums remain untouched during most winters."

Those of our readers who have not taken the matter of climate into consideration may feel astonished at such a glowing description of the climate of this highly favoured county; but I am assured that many parts of it will fully bear out the remarks of "SALTERTON." Who has not heard of their famous Orange-trees bearing fine crops on the open walls? of their huge Myrtle-trees, and many other tender things, which those of the mid-land counties or the north never think of but as greenhouse plants? But the fact is well pointed to by Capsicum culture, Tomatoes, and other tender vegetables. I was scarcely, however, prepared for "SALTERTON's" remarks as to Geraniums, which "remain untouched most winters." But the query of "SALTERTON" has reference to the Fig, and the success recorded but adds another feature confirmatory of the above facts. Before, however, attempting to account for the precise fact recorded, let us for a moment look over the position of out-door Figs in Britain, and inquire a little about their habits, &c.

We have all heard of the famous Sussex Figs, in regular Fig-orchards, at Tarring, near Worthing. This tree is said to be a native of Asia, and there is very generally to be found; but some parts of Africa boast of their Figs, whether native or not; indeed, they may, no doubt, be found in most parts of the civilised portion of the globe where sufficient heat prevails, and where the winters are not excessively severe. It is stated by various travellers, that Fig-trees in certain parts of the Continent may be met with as large as our orchard Apple-trees. Without staying to question such enormous growths, it may, at least, be affirmed that the Fig-tree is capable of producing what we have a right, I suppose, to call timber. I name this here, as an important consideration for those unacquainted with the habits of the Fig, and may have to refer to the fact again in the course of my remarks. The cultivation of Figs, as our readers will remember, is an important commercial consideration in the islands and marginal parts of the Mediterranean, and some parts of France would appear to be equally well adapted to their culture; so that all I have quoted is at once calculated to show, that below a certain average of summer temperature the Fig may not be expected to thrive out of doors in Britain. If I were asked an opinion as to that temperature, I should, at a venture, not having reference-tables at hand, say that an average of *at least* 64° by day is almost indispensable through June, July, and August. As for night temperature, that we need scarcely concern ourselves about; it is high temperature with light in which we have the chief interest. But to enable Figs to flourish, and to be worth talking about, and worth eating, too, we must expect such occasional indulgences as a thermometer at 80° to 90°.

We will now consider the matter of temperature as proved, and proceed to other considerations connected with out-door Figs. One thing is notorious; the same kind of Fig may be met with in different quarters, or even different gardens in the same neighbourhood, as much unlike in habit of growth as it is possible to conceive. The chief difference to which I allude is the length of the annual growths, and the distance the eyes, buds, or joints are apart. In one case we may see a tree making from a foot to half a yard of young growth;

in another only three inches; the buds or joints in the former four or five inches apart; the latter possessing as many or more eyes in a length of little more than two inches. Now, it may fairly be inferred by even those not conversant with Fig culture, that the results from wood so differing in character must of necessity be very different; and so it is. The half-yard growth is a pampered tree; the two-inch growth about in the condition nature intended, more especially when we consider what the tree has to relinquish in point of climate, as regarding heat and light, compared with its native country. Here, then, is at least one prime reason why the same kind of Fig should in one situation produce excellent fruit, and in another, perhaps equally favoured, anomalous results. The results that might very fairly be expected, and which do actually occur, are as follows:—The young Fig does not form on these gross shoots, or if it does, it forms too late, and is so ambiguous in character, on account of bad organisation, that it is difficult to discover whether the bud is a fruit or a shoot. Indeed, the unfolding of a subsequent spring most frequently shows too plainly the ill-effects arising from a gross habit, acted upon by a climate too deficient of heat and light to meet such an extravagant case. And why not such circumstances modify or thwart the power of the tree to retain the autumn-formed Figs, about the premature casting of which, in the ensuing spring, we have heard so much during the last thirty years?

If there be one fact connected with hardy fruit culture more proved than another, it is, in my opinion, this—that in the case of tender fruit (for the highest culture of which our climate is confessedly inadequate) the more they are stimulated the worse they succeed. This has been my theme for years since I have had the honour of addressing the readers of the ever-busy COTTAGE GARDENER, whose motto I am persuaded our good and facetious friend Beaton would agree might very fairly be *Nunquam dormio*.

However, I proceed. When I spoke of the absence of what we call stimulants I do not for a moment mean that all tender fruits must be planted in a barren soil. A soil may be tolerably generous in a way that we little dream of, and yet not contain a particle of any kind of manure, and, perhaps, as little as may be of any organic matter. Nevertheless, it is not a question of mere soil or stimulants, as I have often urged in these pages, but the relation the chief bulk of the roots bear to the ordinary ground level of the district is a thing of much more importance than is commonly imagined. If the climate is confessedly somewhat deficient, of what use is it forcing such a vast amount of fluids into the system of the tree? and what can be expected but watery wood, unfruitfulness, and disastrous results? These facts, if they be worthy of consideration, bear at once on the Fig; and although it may appear to some fancies going a round-about route to prove a case, yet I am convinced that this is the soundest view of the subject; and, as has been often said, "the farthest way round is the nearest way home," and so I seize on this old saying to defend my position.

I will now come to the exact fact of "SALTERTON's" case as far as I can throw light on it. Many kinds of Figs produce a second crop, which, in our odd climate, may be found, according to kind, &c., from the size of a Pea to that of a marble, or even more advanced still. These Figs are ever difficult to secure on the tree; it is a common complaint that three-fourths of them fall off; and why? Here is the rule. If the Fig wood itself is proved to have an aversion to some of the extreme winters of Britain, why should we expect that this young embryo Fig, with a skin as fine as a delicate Peach, and a tender, half-organised, half-solidified pulp—if such we may term it—should endure, in regard of temperature and its accompanying con-

ditions, what the old wood is scarcely able to sustain? Where Figs are so happily situated as to have been proved qualified to carry one good summer's crop, and to cast most of the late-formed Figs, my advice is, moderate your aims, pull off much of your second crop as soon as fit to handle, and just be content with those which are like big Peas. These may possibly endure a smart winter; and although they will not yield so early a Fig as those which so flattered by their bouncing looks in October, yet they will prove truer and more satisfactory.

That these highly-promising-looking young Figs which, by their bold appearance, tempt the cultivator to try with all possible effort to retain them for a very early crop, detract from the powers of the tree, there can be no doubt. It is not merely the present root action which satisfies them; they are, doubtless, devouring the "true blood" of the tree; and if so, they are detracting from those precious stores which it had taken many weeks of summer heat and light to manufacture.

I must here congratulate "SALTERTON'S" friend on his seedling Fig. It must surely be an excellent thing, and, being raised from seed, claims an extra notice. The protection of the wood of Figs from frost during the winter is a thing which has been, in former days, considered a necessary proceeding. I have myself several times known them either partially or totally destroyed. In that hard winter, the great frost of 1813-4, I well remember that most of the Fig-trees about the metropolis were destroyed. Now, how the Devon or Sussex tree fared I know not; but, by accounts we have heard of huge Figs, some of them must surely have escaped the murderous embraces of the Ice King on that extraordinary occasion. But I would here remark, that in a notice which appeared in one of the papers lately of a celebrated garden, it was stated, that after missing a crop for years, the gardener had discovered that, unprotected in winter, they produced good crops. But really, if gardening is to be an art that is to be learned, unlearned, and learned again and again, who shall undertake to affirm anything? Now, as to pruning the Fig, surely it does not require much Greek to accomplish this. I remember a gentleman who had lived much in Sussex one day wondering at Fig-trees in the north on this score: "Why prune them at all?" he said; "they never prune them in Sussex." To this I answered, that no doubt many did not prune them for a very simple reason—they did not produce too much wood. But the gentleman in question knew more about poodle dogs and such things than Figs. Of course, few people choose to prune Figs as Gooseberries are pruned, since the fruit is produced on the young and terminal points.

R. ERRINGTON.

GIGANTIC GOURD.—Captain Hall, Cobfield House, Exminster, Devon, has grown a (Citronnelle) gigantic Gourd, seven feet in circumference, weighing 150 lbs. It is excellent for soups, pies, &c. [This is an unusually large specimen.—ED. C. G.]

THE GLAZED STRUCTURES AT SHRUBLAND PARK.

THE conservatory here is one of the best-furnished houses of the kind in the country, from Coxcombs and Balsams up to Phalænopsis and Saccolabium. To give a detailed account of every set or kind of plants which make up the circle here would take a ready writer, at our pace, just twelve months to describe, and then be tight enough for room.

One of the *Balsams* which I saw there, if cut up into four quarters, each quarter would be a larger and a

better-looking plant than most of those at the Crystal Palace. *Campanula pyramidalis* as a biennial, and at times a three-year old subject, is flowered here for many years at from seven to ten feet high, and from one centre spike to an eight, nine, or ten-spiked centre; and yet ordinary people think it is out of fashion, and run after novelties which are trumpery in comparison to it. *Lobelia fulgens*, four, five, and six feet high, some with one spike, like the Campanula, and some with the centre spike stopped at an early age, and five of the best lateral, sucker-like, secondary shoots brought up instead, in one mass a yard high, and above twenty inches in diameter. The system is the same as with the huge Balsams till the five shoots are fairly started, and then it is fast or slow, in-doors or out, as the plants are wanted early or late. The Calceolarias, coming in for crossing in 1853, put a stop to a mania for hybridizing Lobelias, which has been a dead letter ever since. I recollect Mr. Francis or James Dickson, from Chester, and Mr. Low, from Clapton, meeting by chance at a cross-breeder's in 1835, and in all their travels they never saw such hybrid Lobelias, one of which they had measured, and found it nine feet high all but one inch, and two feet four inches of the spike were in bloom. Both of them offered five guineas for the plant; but it was not for sale, and the breed was soon lost. Who will revive this old breed? Perhaps Mr. Foggo here if he had not so much to look after. But I only mention such things at all in order to undeceive many whose notions carry them beyond the mark in thinking that any one of God's flowers is "too common" for really sensible people. Oleanders, Pyramidal Saxifrage, Stocks, Tree Violets and Mignonette, old Cloves, Cabbage Roses, Anna Boleyn Pinks, forced Double and Single Wall-flowers, Sweet-leaved Geraniums, Balm of Gilead, and Sweet-scented "Verbena," or "Lemon-plant," and many more such, are among the Queen's favourite flowers, and are as much prized in such large gardens as this as Air-plants, Ixoras, Gardenias, and all the best stove climbers, which did and do as well in this very conservatory as in most of the ordinary stoves, which brings me to the peculiar treatment of the house.

In the first place, it is built over cellars, which are arched, the arches running like a ridge-and-furrow roof, being the bottom of the borders for the climbers; the borders are twenty inches deep over the crown of the arches, and nearly three feet deep in the valleys between the arches; there is a good drainage along each valley, and none over the crown of the arches; the beds and borders are level with the paths, which are of stone. The south end of the suite of drawing-rooms projects twenty feet beyond the line of the main pile of the mansion; the end of the conservatory "butts" against this projection, and the "main pile" forms the back wall of it. In the centre of the "back wall" is an indent twenty feet long and six or eight feet deep. Over this part is a separate span-roof, which is lower than the main roof, also a span, and is air-tight the whole way. The only "top air" is given from the roof of the indent, which, being lower, leaves the main roof air-tight. Here the *Baumontia grandiflora* blooms so freely that Sir William sends baskets of the cut flowers in June all over London as presents to his friends; *Passiflora Loudonii* and *Racemosa* or *Princeps* the same; *Stephanotis floribunda* and *Begonia venusta* ditto. *Ipomæa Learii* encircles the whole roof, and the fallen flowers have to be swept up every afternoon to prevent foot-slips over them. *Tacsonia mollissima*, being a hardy greenhouse climber, is taken up to the springing of the pent-roof, and is there grafted with *T. manicata* and *Passiflora quadrangularis*, which thus blooms as freely as the varieties of *Cerulea*; and no doubt this *Tacsonia* would make a good stock for the whole family of Passion-Flowers. *Tacsonia pinnatistipula*, the next best after

Manicata, is impatient of heat, and blooms better against a south wall when much frost is guarded against. The long shoots from these, or many of them, would hang down to the paths were it not that they festoon them in all directions, which festooning has a fine effect over a display of flowering plants, brought in from a dozen new span-roofed houses in the kitchen-garden.

Mr. Davidson made another experiment by airing the roof, but then the stove climbers turned sulky, and they had to turn the tune to "Auld Lang Syne." But Sir William has another experiment in view—nothing less than to build a pit-like stove, eight feet wide, and not much higher, across the farthest end of the conservatory, for growing stove climbers in a five-foot-wide bed, which will be two feet deep; and, at the height of six feet from the bed, the top of the climbers will be introduced into the conservatory to run about as they list. This pit-stove will be hid from the inside of the conservatory by "frosting" the lower part of the glass, and in very severe winters a private door will be left open to let more heat into the conservatory from the pit. Altogether this will be a new feature in first-class conservatories, and one which will be very well worth imitating. For the four or five winter months such of the climbers as may not like to be so cold will be closely pruned, coiled, and brought back into the pit, to hang there from the rafters till every spur and eye on them is in full leaf again.

For wreaths of cut flowers from rare stove climbers they are going to plant the *Beaumontia* and other rare-to-be-seen kinds in the centre bed of a new, magnificent, span-roofed, Calcutta-house, which is divided from an Australian-house only by a glass division, through which, near the top, these climbers, or parts of them, will be introduced to run over greenhouse plants; and thus, besides making a longer season, as it were, for each kind, they will first ascertain which kinds are the most likely to suit the new scheme for the conservatory. Every family of stove or greenhouse plants has a representative in one or the other of these two houses, which are each sixty feet long and twenty feet wide, span-roofed, and yet there is a house "on purpose" for each of the fashionable groups on the establishment; but my visit was too short to get at the best kinds and the modes of culture. One would need a whole week to go over the pot-plants alone.

There are two Orchid-houses of large size full of plants from all parts; a house for Begonias, which looks as gay as a Geranium-house; a Fuchsia-house, a Balsam-house, with tan-beds and a span-roof. One or two seeds are put into a 60-pot, and the best plant is selected to remain. The compost is near to that recommended by the late Mr. Knight, of Downton Castle, almost all fresh, turfy loam, fresh horse-droppings, peat, and foul liquid-manure, and a shift as soon as the roots begin to coil in the pot. Some of the largest plants are flowered in No. 2, 4, and 6-pots—enough for two men to lift on a barrow. A house for Gloxinias, Achimenes, and all low, soft plants of that description, with a walk down the centre, a bed on each side, with hot-water pipes running through troughs of water for bottom-heat, and other pipes for the top-heat. Mr. Foggo pulled up every pipe and boiler left him by his predecessors, and wonders how Messrs. Davidson and Beaton could make both ends meet with their slow coaches. All our boilers were bad or badly set, and would not yield sufficient heat. He prefers Gray and Ormson's boilers and arrangement to any others, and with stop-cocks and valves he seems really to heat as much with one boiler as Mr. Weeks himself.

All the Melons are grown in a house on purpose for them, and in several divisions the plants are trained up under the glass. Cucumbers the same all the year round. Another low house is for growing Vines in pots. Mr.

Niven now, and for many years in Ireland, was the first grower of Vines in pots in a regular house by themselves. I saw his first crop just when I began to think about gardening. From that day to this I did not see such "rods" as Mr. Foggo had in this house. Anybody may fruit Vines in almost any kind of house or pit if he gets his rods made for him, or on purpose: that is the battle; but a more strange cause of battling I heard on the spot—a gardener actually threatening to have Grapes on his master's table every week in the year, and the master protesting that for nine months in the year would be quite enough.

A summer Mushroom-house and a winter Mushroom-house are here. The former being kept much damper, and the latter more dry than usual, seemed all the difference from our old notions; both answer well.

A retarding-house leaning against the north wall of the kitchen-garden; but, from the irregularity of the ground, the wall is fifteen feet high on that side. The house may be eighteen feet wide, and from sixty to seventy feet long. Here you see Stanhopeas, Vandas, Saccolabiums, and other air-plants hanging over Oleanders, Scarlet Lobelias, Geraniums, Heaths, and all manner of mixed plants, put in here to keep them back for great occasions, or till there is room for them in the conservatory. A north house for keeping back things, if only high enough for twenty plants, is one of the most useful one could think of; the only secret is to keep the sun from them. There must be as much glass and light as for Heaths. If there is the least darkness more than the plants were accustomed to the end is defeated; they will either cast their blossoms or draw up so weak that the flowers are gone as soon as they are brought out. This house is heated by a flue, and makes a good stove-house for Myrtles and such-like plants during the winter.

But the most useful house of all for a large establishment, or for the smallest if it could be had, is one to hold specimen plants in winter for standing out in the flower-garden in summer. One of this description, which was all but finished here at the time, is the best of the kind I ever saw. It is sixty feet long, twenty-four feet wide, and twenty feet high, a span-roof, and looking to the south; the north half of the span is covered with slate and plastered inside; the south side is of glass; the south front is solid brickwork; and the north "back wall" is a succession of large windows from floor to roof with equal breadths of brickwork; each window opens outward; the two ends are solid brickwork, and the face of the inside walls is plastered. There are two tiers of shelves all round the front and ends, supported by brackets fastened in the wall. There is a "front door" and a back door, wide enough and high enough to let in or out specimens of the largest size; the floor is as for the drainage of the best Vine borders, thus—thirty or forty feet deep of white sand on the edge of a steep bank; a foot of rough stones and brickbats next the sand; and two or three more layers, each of smaller gravel than the last, but not binding gravel; the surface is more of the size of small shot; every drop from the bottom of the pots, tubs, and boxes will be out of sight in a moment, and no damp either. A complete set of four-inch hot-water pipes round the house is connected with a large boiler, which works several ranges in the rear, and, by turning a valve when the frost gets more than -5° to 6° , a rush of hot water soon makes all safe for the night. It is here that the eighteen-foot-high specimen *Scarlet Geraniums* will be wintered; fifty to seventy standard and pillar *Fuchsias*, from twelve to twenty feet high, ditto; *Humeas* from five to ten feet high the same, and they have the best mode of showing them off I ever saw. By the time a specimen attains full size it is as bare below as a man without a shoe or stocking on, or something else to his back. I

have seen a score of such out on the lawns this very autumn; but here they allow no scarecrows of the kind; you must clothe your specimens, be the cost what it may. The old *Humea* is first planted and secured with stakes; then three or four or more young *Humeas*, with broad, soft leaves down to the ground, are so planted round as to appear to be so many fresh-looking branches from the old plant, which adds tenfold to the looks of this most graceful flower-garden plant. The young plants are providing for themselves all the time, and in the autumn they are better than if they were in pots under ordinary culture.

Another point worthy of all praise in the management of specimen plants is insisted on here, and always was; and I will explain it by saying, that everybody is now aware that a Gooseberry-bush or a Currant-bush full of suckers round the bottom never produces so much or such good fruit as if there were no suckers; and gardeners pride themselves on having a handle to such bushes now-a-days, that is, a few inches of clean stem between the roots and the first spread of the branches. That kind of pride, it is said by people of taste and judgment, ought to extend to all specimen plants so called; and yet they make no objection to allow ever so many plants in one pot, or tub, or hole in the grass, if they help to make a good show; but that is a different move from showing your skill in the growth of a single specimen. On this principle *Baron Hugel*, from Brighton, was the only true specimen of Scarlet Geraniums at the last Crystal Palace Show; most of the rest looked too much like bushes with suckers.

Time and space fail me, else I would tell of the immense numbers of *Ferns* and *Lycopods*; how they "come" for great parties; how and when they are most useful in furnishing rooms and lobbies, corridors and staircases; of *Grapes* in pots on the dinner-table; of orchard-house fruits of all sorts, ditto; of *Granadillas*, of round, purple, and oblong, yellow shapes and colours, hanging from the rafters of the stoves; of *Allamandas* and *Ixoras*, and many more such, cut down at different periods of the season, so as to bloom till bloom "comes again;" of glass walls against fruit walls; of the "finger and thumb" whole system of managing young trees; of the different ways of propagation, and of much more to the same tune. After that let me add, that I think I saw three sports on one Geranium in the "French Garden," and some of them will be the long-lost *Peltatum variegatum*. If so, the *Peltates* must revert to the true *Ivy-leaves* or *Lateripes*. At all events, *Peltatum variegatum* has not been "long lost;" but it is a delicate subject, very pretty, and the most really peltate of all the race. *Peltate* means the leaf-stalk to come from the centre of the leaf, or from near it, like the handle of an old shield, and is from *peltatus*, a Latin adjective. *Variegatus* is a like adjective, and both are put in the neuter *um* to agree with the noun *Pelargonium*; therefore such names as *Picturata*, *Multiflora*, *Conspicua*, *Intermedia*, and all such adjective names are wrong, and should end in *um* when given as second names to either *Geranium* or *Pelargonium*.

Nosegay Geraniums are estimated at their true value by Lady Middleton, who prefers them to the compact-trussed kinds and circular flowers for brilliancy of tints when the plants are shaken by the wind. They have the old original *Fothergillii*, or Pink Nosegay, *alias* Purple Nosegay; a plainer pink kind very near it, and not so good; a Lilac Nosegay; *Frewer's Nosegay*, a strong red or dark red kind; *Mrs. Vernon* ditto, best light red. These two Nosegays blend well in shading; and Red Nosegay, a dwarf, dark red kind, and some others which are going under proof. To be a Nosegay, or of the same section as *Fothergillii*, the flower must be *labiate*, as it were, or gaping, the two back petals should stand up straight, and the three front ones hang out or down, leaving wide spaces

on each side between the upper and lower sets of petals—the reverse of a florists' flower. As soon as, by crossing, the two sets of petals come close together, the character of the section is lost. Ordinary people know very little of them, and florists set their rules against them; but ladies are wonderfully fond of them for bedding, and that was why Sir Joseph Paxton offered three prizes for them at the last Show in the Crystal Palace, and failed to produce specimens of them. Since then I have been asked over and over again what is a Nosegay Geranium, and I believe Mr. Foggo will be the very first gardener in England who will show us that to live much longer without beds of Nosegays would be like tying one's self to mere Tom Thumb beds only. His list of bedding Geraniums numbers seventy-eight kinds, and this list is before me; but many new ones will be tried next year as long as I think of it. *Trentham Gem* is one of the best they can add for their soil, and the only one of Mr. Fleming's seedlings that will suit their calcareous composts.* The flower is half *Punch* and half *Shrubland Scarlet*, a fine, dark orange scarlet, and the habit free enough to grow in the Fountain Garden in front of the *Shrubland Scarlet*, or between it and *Tom Thumb*.

D. BEATON.

THE SHALLOT.

HISTORY AND ORIGIN.—The land which flowed with milk and honey was also a land productive of excellent vegetable food, and amongst other things necessary to the well-satisfying of human wants was this useful bulb, which is found wild in Palestine, and has, from time immemorial, been extensively cultivated by all the civilised nations of the East, and appears to have entered largely into many of their table luxuries. From thence there is no doubt it reached us, after travelling slowly through the continent of Europe, and in all likelihood its general adoption here was equally slow. Suffice it, however, to say, that it is now tolerably well known; but it is not everywhere seen in luxuriant health, and, no doubt, its culture not being properly understood, and consequent want of success, have prevented its being used so extensively as it otherwise might have been, and Onions are used instead, while able judges give the preference to the Shallot, or Eschallot, as it is more properly called. A few observations, therefore, on its culture may be of service to the general readers of THE COTTAGE GARDENER, especially as the season is fast advancing for its being planted.

VARIETIES.—There is little here to confound the inexperienced, as I have never seen but one kind, the difference of growth and other local circumstances accounting for the Common, Long-keeping, Clustered, and some other inexplicable names; in fact, the character of the ground, season, and other particulars, not forgetting the management, make the sole difference this bulb exhibits.

TIME OF PLANTING.—This is a bulb resembling a well-grown Tulip, and it is equally necessary to have good bulbs of the one as of the other, if a productive result be expected; and as they are retailed out by most seedsmen, I would advise those who have not a supply of their own to procure some good bulbs as early in the autumn as possible, and, if circumstances prevent their being planted then, to lay them thinly in sand, with their tops just protruding through it, and to keep them in a cool place until they can be planted out, which ought to be done on some rich, warm border; for, like the Tulip, this bulb likes good stuff to grow in. In general, the first week of December is the best time to plant; but it may be done a month sooner with equal advantage. If the ground be wet at the time it is better to plant

* Chalky soil affects leaf-mould and other dead vegetable matter.

them as the ground is dug, in rows a foot apart, and about the same distance from each other in the row will generally produce the best crop; but the bulbs may be closer in the row if they are small, as they are not likely to increase so extensively. Use plenty of leaf-mould, with a little sand around each bulb, and the latter not buried deeper than just to hide the crown; for, though the plant is from the warm and sunny East, it is tolerably hardy, and suffers more from the lack of sunshine in our summers than from the frost of our winters. Nevertheless, it is prudent not to plant it on wet, cold-bottomed ground; for with that and a dull summer the crop will be a failure.

Another mode, which I once tried with success, was to plant the bulbs in November in rows eighteen inches apart, and about six inches from each other in the row. These rows were placed on the top of ridges something like Turnip ridges; the bulb being merely covered, the earth was, in a great measure, washed away from them during the winter and spring, so that by May the tufts of newly-formed bulbs were clear above the soil. Notwithstanding, they grew on rapidly, and the crop was an excellent one, the roots being more Onion-shaped than usual, *i.e.*, they were flat instead of long; but they ripened early and well.

HOEING AND EARTH-STIRRING.—Like everything else, these plants benefit much by the ground being often stirred amongst them, which cannot be too often done in dry weather until the tops hang over and occupy the whole ground, so that it cannot any longer be done without injury to them. In winter this may be done once with a small three-pronged fork or digging spud; but in spring and early summer the hoe will be a more expeditious tool.

GATHERING THE CROP.—The time for this will be easily seen by the decaying foliage and the ripened appearance of the bulbs, which also become loose, and easily part from the fibrous roots. When ripe by the end of June, let them be gathered, and spread out in the full sun to harden before storing away, which need not be done for some time, as the outer coating of the bulb is so carefully fitted on, that but little if any waste of its juices takes place, even in the scorching sunshine of Midsummer. This beautiful provision of nature seems to be accorded to all the bulb tribe, most of which are exposed near the surface at that time in a torpid, but not wasting state. The bulbs, having lain a fortnight or three weeks to ripen and harden, may then be carried to some dry place, equally free from damp and fire heat, and then spread on open shelves, or hung up in small nets. A little of the neck or loose part may be pulled off before doing so; but if the bulbs be well-grown there will be little left to remove, and in no case use force to remove it. It is proper here to observe, that an open, light, airy place is necessary to keep them, as they seem sensible of that; and, above all things, keep them from damp. They will often require looking over, and any appearance of decay at once removed.

BULBS RESERVED FOR PLANTING.—When very large ones are wanting, select a few of the smallest offset bulbs, which, on being planted, only increase in size, not in numbers; but it is better to plant some of all sizes, as there is no fixed rule as to the future progeny. The finest bulbs are often and very properly taken for use; but I would not by any means advise planting very inferior ones, as it rarely happens they turn out well. It is also right to mention here, that after they have been grown two years or more at one place, it is better to change, and have others from a distance, or from soil of a different description; and I believe we should be more successful, in a general way, if we had our seed-bulbs from the Continent every year, the same as we have Hyacinths and other flowering roots, for there is a much greater analogy than is generally supposed; but

much good may be effected by a frequent exchange of bulbs for planting, and by allowing them a good, rich border, similar to what a fancy Tulip grower of yore used to pride himself in. This hitherto half-neglected plant may become a more general favourite when its merits and cultivation are both better known.

CONCLUDING REMARKS.—The past season has not been a good one for the Shallot. The want of sunshine in May could not be compensated by the bright days of July, the plant having ceased to grow long before the latter period. It is, therefore, proper to observe, that this plant is more the creature of the season than of cultivation; for, without a good proportion of sun in the months of April, May, and June, the crop is seldom good. Nevertheless, the means necessary to increase the quality of the crop ought to be adopted every year, and, in most cases, nature will do her part likewise; and what diseases the plant is liable to, as the foot-rot, premature decay, &c., are more likely due to the absence of that vigorous growth, which, in most cases, keeps away all misfortunes, and the remedy for them lies in supplying the plant with the means to do well; the season will do all the rest.

J. ROBSON.

CRYSTAL PALACE.—SEPTEMBER 11TH.

(Continued from page 22.)

THE second mode adopted in these quadrants is to make the vase, &c., with its massive pedestal, the centre of a ring-bed of flowers. There is not room to do the same on the opposite side of the walk. That is one objection; but if there were, the mere uniformity would not reconcile us to its adoption. I was surprised last year to read our good friend Mr. Beaton's eloquent description of these ring-beds as a *grand improvement new to thousands*, recommending them for flag-staffs, sundials, and vases and statues set upon pedestals. Were it only for the sake of economy alone, and as being patronised at the Crystal Palace, there can be no longer any doubt of the fashionability of it. (See number for May 1st, 1855.) Now, tastes vary so much, that then, and especially now after having seen them, instead of any desirable advance, I look upon such ring-beds as a muddling retrogression—a mere make-believe—a huddling together of perfectly distinct forms of beauty, and a setting adrift all recognised ideas of the fitness of using certain means for certain objects. I fear, however, that the example of the Palace, the *fashionability* of the thing, and the authority of our friend in matters of taste, will be for some time too much for me, and that, as there have been imitations, so they will continue to be made. As there may be some who will have these ring-beds, and may not be able to refer to the number specified, it is only right that I should give our friend's excellent rule for guidance in such circumstances, which is shortly this:—Given the diameter of the pedestal—be it square or round, place around it a circle of turf of half that width, and then another ring of the same width as the pedestal for the reception of the plants. Thus, if the diameter of the pedestal be four feet, the ring of grass would be two feet, making a diameter of eight feet, and the ring of flowers would be four feet, making the diameter of the circle altogether sixteen feet, which, I presume, is about the size of the Scarlet Geranium ring-beds on the quadrants referred to. The only other rule that our friend would seem to imply is, that the flowers should not be so high as to interfere with the vase or statue on the top of the pedestal; and I may add, that were I making these ring-beds, I would follow these directions to the letter. It is not to the mode of carrying out, but to the whole system that I object, and for these among other reasons:—

1. The economy in materials is over-rated. We are

told, because eight feet of the diameter of this sixteen-foot circle are unplanted, that therefore fifty plants will do what it would have required a hundred to do. Now, it would require seventy-five instead of fifty to plant the outer ring, and therefore there would merely be a saving of one quarter instead of one half, for though the diameter of a sixteen-foot circle is only double that of one of eight feet, its circumference and its area are four times as large.

2. There is no economy, but an increase in labour, and that of a fid-faddling character. How is the ring of grass inside the flowers got at and kept so nice? Does a stalwart six-footer stride over the four-foot ring, or a dwarfer man wade and waddle through it as he can with all the paraphernalia of scythe, clippers, broom, and basket? or are two strong trestles set at two opposite points of the circumference, and a strong plank laid across so high as to clear the Geraniums, and enable the operator to drop quietly into the magic circle at once, and when there *dod dod* away with a small scythe, or magnanimously get on his knees, and clip the whole circle round the pedestal as if he were a hair-dresser? I care not much how, but I know all this involves no economy in labour. I have seen many instances of pedestals forming the centre of flower-beds; and with a vase of flowers on the top of them, or with a statue peculiarly appropriate to Flora, there was not so much amiss in this arrangement when the plants went up close to the pedestal, and there was no open circle. The saving of some twelve plants out of the hundred seldom entered into calculation in such circumstances. Thus managed, I should have no objection to our friend having a bed round a flag-staff properly situated, as the staff might support a large central plant or a strong and rampant climber, that would lend a graceful relief to the dwarfer flowers below. Such vases, even though somewhat appropriate, and standing on elevated pedestals, when placed often in the centre of flower-beds, just tell every visitor that the owners did not know what to do with them.

3. There is an evident make-believism in the whole affair, that, like everything approaching sham, brings disappointment with it when found out. We are told, and truly, that these ring-beds of Geraniums look from a distance as if the whole diameter of sixteen feet were planted; but when looked at from a higher level, or when close at them, we see we have been deceived, as a flat open centre, instead of an elevated rounded one, presents itself. The beauty of a circle bed of flowers consists not so much in its circular circumferential outline as in the somewhat semicircular outline across its diameter. A correspondent the other day, who proposed sinking all his beds beneath the turf considerably, that they might be less seen at a distance, asks the reasons why ever they should be seen above it. Well, the above is one reason in the case of a circle. There is a sentimentality getting rife about concealing this and showing off that in our gardens. If a thing is fit and appropriate for a desirable, useful purpose, why attempt to conceal it? if not, why have it at all? These petty deceptions and make-believes in gardening, if they should become fashionable, will be more extensively injurious than is generally believed.

And lastly, for the present, there is the clashing of distinct forms of beauty, that deprives us of the satisfaction of contemplating them separately, and, therefore, jumbles all. A bed of flowers is beautiful in itself. If you will have rings of them, and serpentine twists round green grass, do so by all means. The object is apparent, and will be duly appreciated. The column—the pedestal with its statue, or urn, or vase, &c.—is likewise beautiful in itself; but whilst the bed has something of the natural in its beauty, the other is purely artistic, and the beauty of the one, though it ever lends a charm to the beauty

of the other when contiguous but distinct, will rarely blend into an agreeable whole. Much of the interest, and, consequently, the beauty of a column or pedestal consists in its having a clear space around it, so that it may be seen down to its basement line, and its security and safety thence be inferred. These ideas are all dissipated when we look upon such a column as if it had been plumped down in the centre of a dug piece of ground, even though we know that the one is as secure as the other. So far as I recollect, these pedestals rise perpendicularly out of the grass; but the ideas of security and massiveness would have been enhanced if they had stood upon a stone plinth, or even a brick one painted and sanded, two or three inches wider than themselves, just upon the same principle that stepping up into a house adds to its dignity and importance. On the other side of the walk the pedestals will be seen free, but with the beds, as I recollect, rather near them. Those interested will now judge for themselves. I do not hope to stay the fashionability; but, while others call it charming and beautiful, with my present lights I look upon this ring-bed system round statues, &c., as an excrescence in ornamental flower-gardening.

I had intended noticing the Scarlet Geraniums all over the grounds; the lateness of the dwarf purple *Dahlia Zelinda*, and also the *Crystal Palace Scarlet* (though how it came to have that name, being an old *Dahlia*, I may in future inquire, as I have had beds of both in full massive bloom since July); the double rings of flowers round other large masses of common *Dahlias* that had been laid; the mode of planting the single clumps in the sunk panels at the Rosary; the beauty of the ribbon chain on the bank of the Rosary, that only wanted a wider row in front to make it complete, and from which I saw the importance of having broad bands of colour in ribbon-gardening, even though two or three rows should be used of one thing instead of one row; the vandykes of scarlet and yellow at the wings; and the thorough trim and neatness everywhere prevalent. But I have far exceeded my bounds, and have no excuse to offer but the great influence the Palace and the doings there are exercising on the ornamental part of gardening.

If I have honestly pointed out anything which it would be as well for gardeners not to imitate, even if I should be found to be right in my deductions, these little matters, contrasted with the grandeur displayed, are but as a small mote in a bright sunbeam. The splendour is so great that we shrink from small details, though these, after all, constitute the greatness of the one whole. A deep sense of respect is felt among gardeners for the man who originated such a grand idea, and who, in working out such honour for himself, also indirectly honoured the class to which he belonged. More than once during the day I heard the question mooted, Could gardeners do nothing in the way of testimonial or monument? We fear that testimonials in this case would be out of place, though the feelings that prompt such questions are honourable and manly. Gigantic statues of the great gardener and his great fellow-labourers in the great work, if placed on the top of the centre and two wing transepts, would break the somewhat monotonous sky outline of the building. But, after all, what need of statue or monument, when, as in the case of the architect of St. Paul's, the visitor at the Crystal Palace has only "to look around him?"

R. FISH.

PEACH CULTURE AT MONTREUIL.

MONTREUIL is situated about five miles east from Paris; but the road to it from the Barrière de Montreuil lies in a north-east direction. Between 1400 and 1500 acres of the Commune are occupied by walled enclosures, chiefly for the growth of Peaches. It appears a walled country, without houses or tall trees to interrupt the view, apart from the village, which lies lower than where the gardens extend. The gardens are generally parallelograms, with cross walls, the latter about 30 feet apart, and from 8 to 10 feet in height. The walls are 40 centimètres, about 15½ inches thick at bottom, and 30 centimètres, or 11 4-5ths inches at top. Three mètres, about 9 feet 10 inches, is now considered a suitable height; but in England, particularly in the northern parts, the walls cannot be too high; for the higher the wall, the better the Peaches will ripen. The walls at Montreuil are generally plastered on both sides rather more than an inch thick. Instead of tying the shoots to wooden trellising, the Montreuillois now prefer training to the naked wall, driving the nails into the plaster. The walls covered with this substance afford one peculiar advantage; they can be kept free from insects by frequent whitewashings without being thereby disfigured. They have permanent copings, projecting from 5 to 10 inches, according to the height of the walls or the fancy of the proprietor. For the Peach, the south-east aspect is considered at Montreuil the most favourable.

The soil appears a poor, yellowish-brown, calcareous, sandy loam, such as would be unfit for wheat or other corn crops. In the Peach culture it gets occasionally some Paris street-manure.

We called on *M. Alexis Lepère, Cultivateur de Pêchers, Rue Cuve-du-Four, 40, à Montreuil-sous-bois*, who has published a very good work on the pruning and management of the Peach-tree. We found him at his grounds, where on certain days he gives practical instruction, each person attending paying three francs. To make sure of meeting him, we went on one of those days.

Before describing his mode of training, considered the latest improvement of the Montreuil system, it may be proper briefly to explain what that system was. Its principle originally consisted in checking the perpendicular flow of the sap by diverting it into two channels, right and left. This was effected by means of the two main branches, laid off like a V. But branches taken from the under sides of these invariably became too weak, whilst those allowed to grow at the same time from their upper sides soon exceeded the original main branches in point of vigour. The under branches frequently died, or became useless from weakness, and those above them had to be lowered in their places. This was the case for two centuries at Montreuil.

Butret published a treatise entitled *Taille Raisonnée des Arbres Fruitières*, which was considered the *vade mecum* of the cultivators. In it the physiological details connected with the management of the Peach-tree are excellent, and led to the mode of allowing the branches on the under side of the main branches to be a year in advance of those on the upper. This was considered the best system of Montreuil training when the Garden of the Society was formed, and accordingly it was there adopted. But it was found not to answer; for although the under branches had the advantage of being started a year before those springing from the upper side, yet in two years the latter not only exceeded those secondary branches, but likewise, in most cases, the main branches themselves. It was therefore found impossible to follow the system with advantage, and consequently its adoption was never recommended by the Society. The Montreuillois now condemn that mode themselves on the same grounds.

In order to remedy the evil as much as possible, instead of starting the under branches one year in advance of the upper, they give them several years' advantage, as will be understood from *Fig. 1*, which represents the number and direction of the principal branches forming the *charpente* or frame-work of a tree trained *à la Montreuil*, as now practised.

The figures represent the years in which the respective branches were originated, reckoning from the plantation of the tree. From this it will be seen that no branches are permitted to grow on the upper side of the two main branches (*branches mères*), marked No. 1, till the fourth year; and then the branch No. 4 is allowed to push; in the fifth year No. 5 is originated; and finally, in the sixth year, No. 6. It must be observed that Nos. 5 and 6 will still be apt to appropriate more sap than Nos. 2, 3, 3, although these have been three or four years longer established. Aware of this, *M. Lepère* has acted on the principle of allowing the under branches a still longer period to establish themselves before any are encouraged on the upper side. He has the east aspect of one wall covered with trees managed according to his *Pratique Raisonnée de la Taille du Pêcher en Espalier carré*. The trees were sixteen years old: one of them extended 40 feet, others 30 feet, on the wall, which is 8½ feet high.

Fig. 2 represents the branches of one of his trees, trained *en Espalier carré*, so named from the branches terminating in points, lines drawn through which would form an oblong square. The marks indicate the places where the leading shoots were shortened, and the figures indicate the years from the plantation of the tree, in which the cuts on the respective branches were made.

Suppose the tree planted and headed back to two eligible buds for producing the two main branches—(*branches mères*) A A, then at the end of the

Fig. 1.

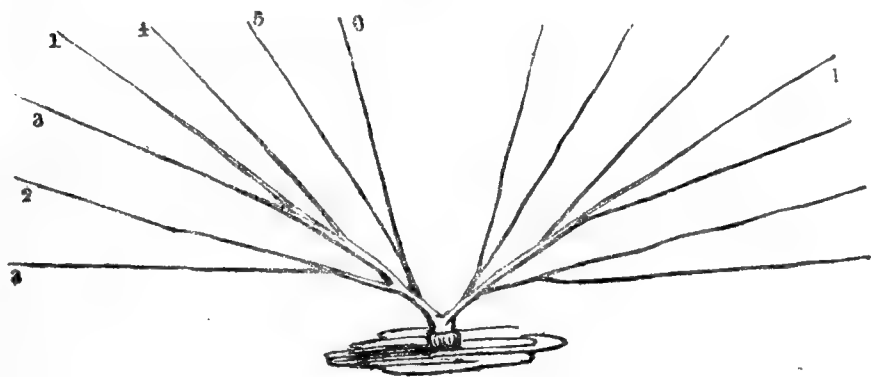
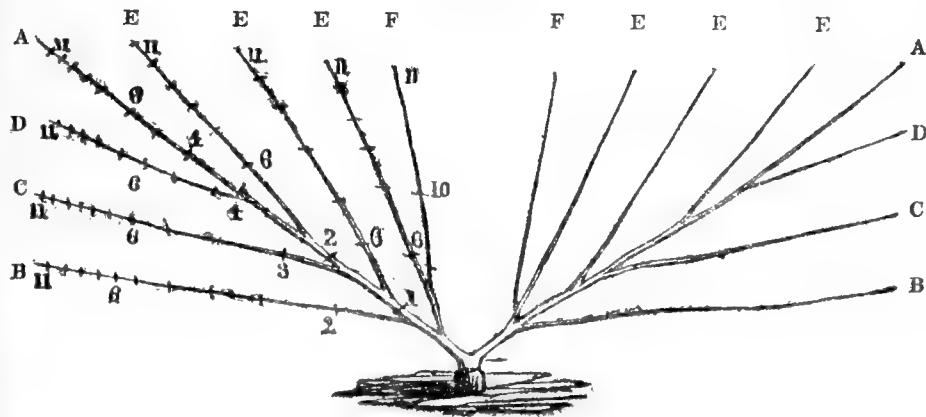


Fig. 2.



First year the branch A is cut at 1, at the winter pruning; and the branch B is originated.

Second year—The branches A and B are cut at 2; and the branch C is originated.

Third year—The branches A and B are cut at the marks beyond 2; the branch C is cut for the first time at 3; and the branch D is originated. The tree has now all its lower branches established.

Fourth year—The branches A B C D have their leaders shortened, as indicated; but no more branches are encouraged for this season.

Fifth year—The leaders are shortened, as usual; and the three branches, E E E, on the upper side of the branch A, are allowed to push.

Sixth year—All the branches, with the exception of F, which is not yet in existence, are shortened, as indicated by the marks 6.

Seventh year—Shortened, but no more branches originated.

Eighth year—Same process as in the preceding year; and a fruit-bearing shoot is selected for the commencement of the branch F.

Ninth year—All the branches for constituting the framework of the tree have now been originated; and, this being the case, no shoots are afterwards allowed to assume the character of branches. At each winter pruning shoots of the preceding summer's growth only are left. In the following summer these bear fruit; whilst the lowest shoots which push at their bases are trained for succession.

Fig. 3 represents a portion of a branch of one of M. Lepère's trees not pruned.

Fig. 4—Another portion, on which the operation of winter pruning has been performed.

Fig. 3.

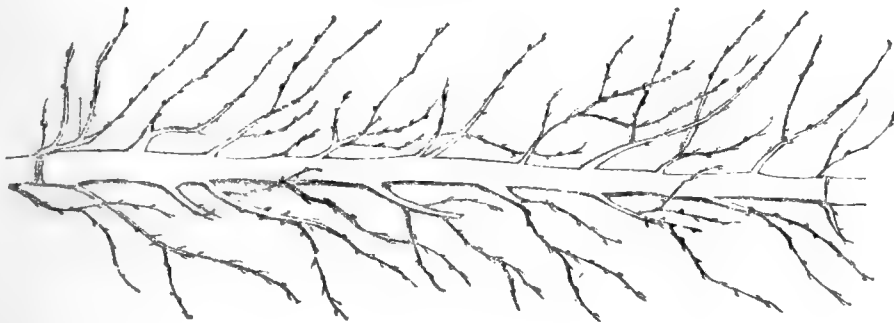
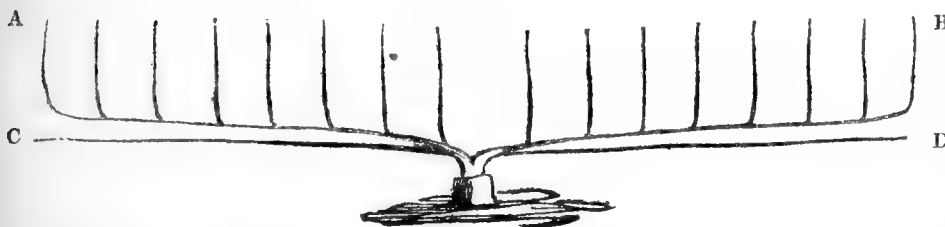


Fig. 4.



Fig. 5.



It will be observed that he prunes the bearing-shoots very short; and unless this be done the Peach-tree will not long continue to thrive. In consequence of leaving the fruit-bearing shoots too long, or in some cases not shortening them at all, very many Peach-trees in this country become worn out, even in their youth, and that too in richer soil than is to be found at Montreuil. M. Lepère, it will be seen, has plenty of fruit-bearing shoots: he shortens them to 6 inches; is satisfied with one or two fruits on each; and so from each of his trees he obtains on an average forty dozen of fine large Peaches. This certainly ought to induce people to shorten sufficiently the bearing-shoots, whatever the mode of training may be.

It is necessary to remark that, on the main stems, A A,

of Lepère's trees, the spaces between the origin of one secondary branch and that of another are not naked. On the contrary, they are all along furnished with bearing wood, on the upper as well as the under sides. Shoots produced in one season bear fruit the next, and then, at the winter pruning, they are cut back close to the base of the successional shoot. A large quantity of fruit is thus obtained along these main branches; but there is another advantage, as regards the health and duration of the tree. When branches are naked to any great extent they are liable to become sunburnt, as was found to be the case with those of a tree trained according to Seymour's mode in the Society's Garden. The bearing-shoots on this were from 12 to 15 inches apart, and on the upper sides only of the branches. When furnished with shoots at closer intervals, to draw sap, and better shaded by foliage, scorching is not apt to occur.

From what has been stated, and by referring to Figs. 1 and 2, it will be perceived that M. Lepère's method differs essentially from the Montreuil, as regards the greater length of time which elapses before any branches are permitted to grow on the upper sides of the two main branches. That the principle is good, there can be no question. A great objection to its adoption in this country would doubtless be, the large space of wall between A A and the centre of the tree remaining so long uncovered. At the end of six or seven years after planting the tree there is still a large void; were it not for this, M. Lepère's system would be perfection. He has a thorough practical knowledge of all the operations connected with the culture of the Peach-tree, and his treatise *Pratique Raisonnée de la Taille du Pêcher*, I consider the best that has ever been published on the subject. He has other modes of training in progress; and it would be well if any were found to equal in principle the above, which he greatly prefers at present, and at the same time afford the means of filling up the centre.

On a west aspect wall a tree is trained as represented by Fig. 5. The mode is termed *Chandelier* training—*Taille en Candélabre*. It extends 40 feet along the wall. The two branches, A B, from which the uprights spring, were first laid off like a V, and were annually lowered till, by degrees, they acquired their nearly horizontal position. In the second year after the tree was planted, the two branches, C D, were commenced. At the end of the sixth year the uprights were all started. Previously to this, however, fruit-bearing shoots were encouraged along the four horizontal portions. The uprights are nearly three feet apart, and the bearing-shoots are trained between them at an angle of 45° elevation. The tree was a good example of what may be done with the Peach-tree, in regard to maintaining the equilibrium of both sides, when in such hands as M. Lepère's. Those possessing less skill would find some difficulty in managing such a form. I remarked that his admired tree, *en Candélabre*, would probably soon die, some slight symptoms of gumming on the horizontals being discernible. That such would be the case I suspect M. Lepère himself had some forebodings; however, he declared, if it should die, he would then nail it to the wall.

On the same west aspect a number of fine Pear-trees had been much cut by a hail-storm in June, 1845. By keeping the wounds covered, fresh bark had closed over many of them; but some branches were still in bad condition.

In shortening a leading branch, he cuts to a bud situated next the wall. The consequence is, that the branch goes on straight, and the section, although exposed, soon heals over, so that it becomes almost impossible to tell where the shortening was effected. This is contrary to the rule usually laid down and followed in this country, which is to cut behind the bud. A bend is the consequence. But the

thickest layers of wood are formed in front of the branch: the wound is, in fact, longer in healing over where this depends on the convergence of thin layers than where they are thick; consequently, a wound in front is sooner healed over than one at the back.

For pruning wood under two years of age, the instrument called a *Sécateur* is chiefly employed; and this I saw plied with great dexterity. For summer pruning, and shortening one-year old shoots, it is far preferable to the knife, particularly in the case of the Peach-tree, where the part left is, at the next pruning, entirely cut away. In cutting close to the main branch, it is necessary to use the knife. If *sécateurs* could be obtained as well made as those I saw in use I am certain they would be much more employed in this country.

The borders for the Peach-trees are prepared to the distance of 5 or 6 feet from the wall by trenching 2 feet deep, mixing the soil well with manure. The trees are planted 6 inches from the wall. In many of the enclosures the rest of the ground is occupied with Vines. In summer the labour of watering must be very great. The Almond is much employed as stocks for the trees.

Although the soil is not rich, yet the trees are vigorous enough, with the little manure that is occasionally forked into the borders when the trees come to bear heavy crops. The cultivators attend well in summer to the equal distribution of the sap; and they adopt means to prevent it being wasted by over-luxuriant shoots, or *gourmands*. To this, and to the shortening of the bearing-shoots to 6 or 8 inches, is to be attributed the success which attends the cultivation of the Peach at Montreuil. To M. Lepère we were much indebted for the full details which he obligingly furnished of all particulars connected with the different modes of cultivation.—(*Horticultural Society's Journal*.)

SUMMER CHRYSANTHEMUMS.

WHEN *Chrysanthemum Hendersonii* was sent out a few years ago, one of its recommendations was its early flowering habit, it being then the very earliest Pomponé variety; and I would suggest that we still hold this sort, which commences blooming the first week in October, to be the earliest of the autumn Chrysanthemums. But during the last year or two a number of new varieties have been raised, which are of a much more precocious nature, and these might be very appropriately called *summer* Chrysanthemums, as some of them commence flowering in June, and even the latest of them are in full beauty by the end of September, just as the earliest of the older varieties are about to open.

Of about thirty reputed summer-flowering kinds that I have grown this season, we must at once deduct nearly one-half, which have not yet bloomed, either in pots or in the ground, though they are now covered with buds like the autumn-blooming sorts. Allowing the above deduction, the following list comprises all that are really summer-flowering, so far as I can state from my own knowledge:—

Annie Henderson; golden yellow.
**Andromeda*; rosy lilac.
**Arc-en-ciel*; rosy crimson.
**Belle d'Août*; orange.
**Comtesse de la Chastnes*; brownish-orange.
Celino; similar to above; both dwarf.
Fortunio; brownish crimson.
**Homère*; reddish-brown.
Iris; crimson, mottled with yellow.
Nérède; crimson brown, semi-double.
**Orion*; clear yellow.
Précurieuse; orange yellow.
Regulus; orange red.
**Sainte Flore*; creamy white.
**Scarlet Gem*; brownish-red.
Zénobie; similar to *Celino*.

Those marked thus * are the most desirable for their distinctness of colour and good habit. I must further add, that as pot-plants it will be needful to cultivate these varieties rather differently from the usual course. I mean that they must be propagated, potted, &c., at an earlier period in the year than the autumn sorts. Profiting by past experience, I intend next season to have all cuttings rooted and ready

to pot off by the 1st of April; three weeks afterwards turn them into a cold frame, and stop all shoots for the last time; about the 10th of May repeat them, and plunge in ashes in the open air; and give a final shift into blooming-pots by the middle of June, and replace them in the same situation to flower. Possibly these new *Chrysanthemums* may be found very suitable for those cold parts in the north of England where the ordinary kinds, from their lateness, will scarcely open, unless against a wall, or under other favourable circumstances of weather or situation.—E. CAMPBELL, *Park Street Nursery, Brighton*.

FERNS AND LYCOPODS IN A GLASS CASE.

As one among many proofs that the able writers in *THE COTTAGE GARDENER* are not often "caught napping," I ventured to follow their valuable advice in the general treatment of a glass case, with its miniature rockery of Ferns and Lycopods, which I constructed in the autumn of last year, and which has surpassed my most sanguine expectations; and, seeing that your readers frequently ask for information on the subject, and as my case has been universally admired, and obtained an extra prize at the last Prescott Floral Show, perhaps a brief sketch of its structure may not prove unacceptable.

The glass case enclosing the miniature rockery is circular in form, measuring fourteen inches in diameter, and twenty-four inches in height, and rests loosely upon a stand of white and gold. On the summit, and in the interstices of the rockery (seventeen inches high), I inserted, without much consideration, the following Ferns and Lycopods, which, with your instruction as to ventilation, &c., have succeeded admirably:—*Asplenium flabellifolium*, *A. marinum*, *A. trichomanes*, *Adiantum assimile*, *A. pubescens*, *A. nigrum*, *Pteris rotundifolia*, *Polypodium vulgare*, and *Lycopodium denticulatum*, *densum*, *umbrosum*, and *stoloniferum*; all which are flourishing vigorously, and exhibit a verdure that cannot fail to delight the eye that rests upon it.

There is only one alteration which might, perhaps, be effected with advantage, and that is to substitute some Ferns and Lycopods of a more dwarfish habit in the place of *Pteris rotundifolia* and *Asplenium marinum*, which are rather getting the ascendancy over their neighbours, and threatening to encroach upon their province. Still the case, as a whole, presents such an elegant and lovely object, that I almost feel afraid to attempt any improvement; nevertheless,

"Si quid novisti rectius istis,
 Candidus imparti, si non, his utere mecum."

—R. P. C., *Eccleston Parsonage, Prescott*.

BEEES IN SCOTLAND THIS YEAR.

I AM a quiet man, living in a quiet place, and am so confirmed in a certain round of peaceful habits, that I cannot avoid thinking some person must have "awakened the wrong man" when I find myself so far out of my usual course as to attempt writing to a public journal, for my pen was never before used except in the service of mammon, in noting down items of "filthy lucre," or in adding up £. s. d. Indeed, I am convinced that nothing under the sun could set me writing but bee matters; and even this subject would not have produced such an effect but for the following reasons:—Up till a very recent date I had never seen anything particular in print having reference to bee-keeping, and I might still have been in the same state of blissful ignorance, but I had the misfortune to become a subscriber for *THE COTTAGE GARDENER*, and, subsequently, in consequence of what I therein read, I bought a book on "Bee-keeping." This book I opened with reverence, and read with great care and attention, but all in vain, for I found nothing new, while there was much important matter wanting—particulars connected with management quite familiar to the small community of apiarians of this locality, of which I consider myself no mean member. Now, this discovery has unhappily inflated my "bump" of pride not a little, and I cannot avoid ruminating with selfish glee on the fact, that we know these

things so much better than the generality of mankind. In short, my organ of self-esteem has gained such a powerful ascendancy over every other in my head, that I am compelled to write as a sort of "safety-valve," in order, as soon as possible, to become "myself again."

I have often heard that it is much easier to find fault with the doings of another than to do anything well one's self; so I will take the easiest plan, and just have a "tilt" at your correspondent, D. G. M'LELLAN (who writes on the 23rd of September), under a hope that he, or some other, may *strike back*, and help to bring me down a few pegs.

By way of a beginning, will you allow me to express how deeply I sympathise with D. G. M'Leilan in his lament that the Scotch bees did not fill their glasses this year? *Full* glasses and joy, and, as a matter of course, *empty* glasses must be akin to grief; and I must not fail to note how much I admire the Christian spirit manifested by Mr. M'Leilan, who finds a "cheering balm for his grief" in the better luck of Mr. Tegetmeier. I wot I am so much less a Christian, that, under similar circumstances, there would be no such "balm in Gilead" for me.

Mr. M'Leilan is correct in reference to the late dismal season; but management is all-important in bee-keeping, and I beg to offer a few remarks on what I consider Mr. M'Leilan's *mis*-management, and consequent want of success in his apiary. He says, "Number one is a Taylor's single-bar hive, peopled, &c. The bees were chloroformed with complete success." Chloroform and the dividing of bone and muscle—chloroform and all that is horrible—may be all very well; but chloroform and the sweets of the honeycomb have no affinity, and should never be brought into contact. Chloro—Oh! let me draw breath, and, at the same time, draw myself to my full height, so that I may the more energetically protest against the use of any and all such drugs. A skilful apiarian knows how to take bees from one hive and join them to another without having recourse to chloroform, fungus, puff-ball, brimstone, and all such abominations; and he who has this to learn has not yet crossed the threshold of bee-management. Now, then, that affords a person a little relief, so we will return to Taylor's single-bar hive. By allowing the bees to commence in the top, or honey-box, Mr. M'Leilan acted "according to Cocker;" but he went wrong when, at the end of three weeks, he saw his top box combed and partially honeyed, to put a box between the top and stock. He should have made sure of getting the top one filled before he added another next to it; and if he saw signs of swarming, or of too much crowding, he should have given them room *below the stock*, by which arrangement the little workers would have remained in the top box, which they would, in all likelihood, have finished. The triplet-box being filled with brood must have resulted from the body of the hive being too small, or the opening which led to it too large.

Mr. M'Leilan believes the storifying system will always be more or less subject to brood. This I do not deny, but should like to know a system better adapted to this locality, which is near Glasgow. The collateral system will, I imagine, work very well in the south of England, where they have better seasons; but the storifying system is, *when properly managed*, infinitely superior to any other for us.

I confess myself very sceptical as to the good results following Mr. M'Leilan's plan of putting on glasses as soon as the swarm is hived; indeed, if he has always been successful in getting his glasses filled *without brood*, I would call it a miracle in bee-keeping.

Having made pretty free with Mr. M'Leilan, I will now say a word about my own success with young hives this bleak season. I will be brief, as I fear I have already encroached too far on your space.

By uniting two swarms, which were no better than a top and second, I took off, on the 15th of August, 21 lbs. of fine-finished comb, and last week the hive from which this was taken weighed 46 lbs. This is a peep at a portion of my doings, and I hope, at some future period, to have the pleasure of saying something more about bees.—ROBT. WILSON, *Stewarton*.

[The oftener you write the more we shall be obliged.—
ED. C. G.]

QUERIES AND ANSWERS.

WINTERING PLANTED-OUT GERANIUMS.

"A friend of mine has some six dozen of very fine Geraniums—different sorts—planted without pots in a bed. The climate in the Frith of Clyde is so mild, that even the Myrtle, in certain situations, stands out all the winter. Now, he is puzzled what to do with the Geraniums. Do you think them safe left in the ground and covered with Fir bushes or straw? or could he lift them and stuff them into a box with sand, leaving them, for the three or four winter months, in a shut-up dwelling-house?—W. R. W. S."

[The safer plan of the two is to leave out the Geraniums, and to cover them in severe weather with dried fern, or hay, or straw. The leaves, and most of the green wood which was made this season, should be cut off now, and the first inch of soil on the surface of the bed ought to be scraped off, and two inches of very fine, dry, sifted ashes laid all over the bed, drawing it into little cones round the bottom of the plants; then to cover the whole with six inches deep of moss, working the moss well in among the bare branches, the dry fern to be put over them only during hard frost. If this plan was well looked after it would be more safe in most places than damp cellars and cold rooms.]

WINTERING POTTED GERANIUMS IN AN OUT-HOUSE.

"I have a good many Scarlet Geraniums and other plants, and have only a small out-house, with a window facing the south, to keep them in in the winter. It is built of boards, very thick ones, viz., two inches at the sides, and the roof nearly three; the floor is made of Dutch tiles, well laid down, and the window admits plenty of light. Now, I should like to know if I stand any chance of keeping them throughout the winter, as I shall not be able to have a greenhouse built till the spring?—C. L."

[Scarlet Geraniums will keep very well in the house you sent us the plan of, if you merely keep damp and severe frost from them. This class is all the better for a long, dry rest, if not too dry; therefore, unleaf every one of them at once, and have some warm covering to throw over them during severe frost. That is just how Harry Moore kept his boxes of them these dozen years in a much worse place than yours. Always bear in mind that damp is worse for them than a little frost. The "other plants" will do if the winter is not too hard. Keep them rather dry during frosts.]

PEAT FOR DRAINAGE TO CUTTINGS.—MOVING CARNATIONS, &c.

"I do not know how far you may be aware of the love cuttings, &c., have for peat (sold here in small oblong pieces for burning). Last May I had some cuttings given me of Verbenas. I put them into a box, with drainage at the bottom, and, for want of anything better, put a layer of the peat over it; then some light soil. The cuttings began to grow quickly, and in planting them out I found the roots had so matted themselves all through the peat that, for fear of killing them by separating it, I planted peat and all. In taking up the plants this week (which have been very nice all the summer, green in foliage and bright in flower), I find the roots have *confined themselves to the peat*. I think this knowledge, if new, might be turned to advantage in many bedding-plants. I shall try it largely next spring.

"May I remove Cloves into a border now? They are large plants, and were forgotten to be layered at the proper time. I have several Carnations and Picotees in pots that have not been under cover: should I protect them? I intend planting them out in the said border this next week.

"I find a layer of powdered charcoal on the top of the soil in pots of Verbena a good remedy against mildew. I have cut in all my Verbenas, and placed them *under* the stand in the centre of a small greenhouse. How often ought they to be watered? It will be a *dry place*, as the fire-place is under.—KATE."

[We had just such another instance this season. For a temporary shift last May we used one-third dry packing moss in each of sixty-three pots of bedding Geraniums without

any other drainage, and now the balls come up out of the beds nearly as well as out of pots. We also tested "The Doctor's Boy's" plan of a layer of moss just beneath the surface in large pots, and it suits admirably. We shall have all our specimen plants of the soft-wooded section and Fuchsias on the "Boy's" plan.

You may remove old *Cloves*, *Picotees*, and border *Carnations* now and till the end of November, and improve them much by so doing if you trim the heads properly, that is, cut away all the old parts which flowered and the dead grass, so as to give freedom to the strong shoots which are to flower next year. It is not a good plan to keep any of these in pots out of doors during the winter; they are more safe in the free ground. Charcoal is not a bad thing on the tops and at the bottom of plants; but it will not save your *Verbenas* under the stage if you water the plants on the stage like other people. *Verbenas* are the very last plants in the world to stand the winter under drip. If we should have a mild winter you will lose every one of them; and if it is a very hard winter the fire may keep the place dry enough for them. In that case twice a week will be often enough to water them; but watch and see if the pots look too dry, and if they do, three times a week must be the rule.]

WINTERING PELARGONIUMS.

"I have got several healthy young *Pelargonium* plants of rather good kinds (such as *Flavia*, *Rowena*, *Lucy*, &c.) in my flower-beds which have been blooming the last month, and have still some flowers upon them. Some are plunged in pots, and some without them. Be so good as to tell me how I should treat them to keep them alive for next year. Should they be pruned, cut down, &c., or simply replaced in the greenhouse? Will their cuttings grow if simply stuck round the edges of a large pot as you recommend for *Tom Thumb* Geraniums, so as to bloom when potted out next spring?—A VERY YOUNG GARDENER."

[This is a regular Balaclava business, but we are used to it. In the first place, save the plants by all means; but, by the time you see this, it will be just a month too late for them, and all the cuttings will be lost. No one need put in a cutting of any *Geranium* after the 1st of October who has not stove heat and practical experience, and with both we have ourselves lost them by the score sometimes, and sometimes we lost few or none. If cuttings were taken at the beginning of August, while the plants were at rest after the house-blooming, and put into the open ground, they would have made better plants for next year than the old plants under this system. It is not safe to cut the plants down as you would potted plants in August. If you shorten them so as to do away with two-thirds of the bulk of the head that will be about the best proportion. It will be as well if the roots do not carry much soil with them. Keep them entire; use leaf-mould and sand as one-half of the compost, and put them all into as small pots as you can cram the roots into, and towards the beginning of February, give them large pots, and richer and more solid stuff to bloom in. After blooming next summer, plant them out, and before the 10th of August make out-of-door cuttings, and, after you see so much return for so very little trouble, you will never forget again that all these kinds of cuttings should be done with in time to begin grouse shooting on the 12th of August.]

ARAUCARIA BRAZILIENSIS.

"Notwithstanding what you said in THE COTTAGE GARDENER of July 29th, under the circumstances, would it be well to let it stand as it is, or to take it up, and give it a little protection from frost, say in an out-building, with no artificial heat, so as to prepare it for the next winter, to stand the frost if it will?

"You say, 'What made you buy such a troublesome customer?' The facts are these: I was at a sale of a gentleman's establishment, and bid 7s. 6d. for the plant, being in a large pot, and not thinking of becoming the purchaser certainly at that price, and it was immediately knocked down at that sum; consequently, the loss will not be very extensive if I do not succeed with it.—A SIX YEARS' SUBSCRIBER."

[If removing this ten-feet-high *Araucaria* to an outhouse does not kill it before the winter is out, the heat of next summer will cripple it so, that, at the next removal, you would see the last of it. A Fleming or a Baron might manage it for years, but depend upon it amateurs cannot manage such things. Although we strongly advise amateurs as to the best course to pursue, we should be the last to scare them from their hobbies. Take up the tree by all means, with all its roots, and as much soil as will adhere to them. Put six inches of half-dry, light soil all over the space which the roots will occupy in the outhouse, and after placing it upright on that soil, let it be tied so that it cannot move right or left or sideways; let every root then run out as if the tree was to remain "for good." Now fill in about the roots till they are just covered; then water gently over them with a fine-rose pot, to wash in the soil among the roots. After that, put three or four inches of the soil all over the space, but do not water this time, and the work is finished. When you see a likely run of fine, mild weather, syringe all over the leaves; but the roots will hardly want more water till after the end of January; a little litter over the soil would keep it sufficiently moist. It must be near the end of May, and a pelting wet day, when you remove it out of doors. Pray let us hear how you succeed, if only to register the death.]

GOLD FISH.

Your correspondent, "Z. Z. Z.," THE COTTAGE GARDENER, October 7, should at once remove his Fish and clear out the pond, and, when he examines the bottom, he will most probably find a number of water-beetles, or the larva of beetles, or dragon-flies. These have probably got into the pond, and caused the havoc he complains of. *Dytiscus marginalis* and *dimidiatus* are ravenous aquatic beetles, very common in still, rank waters; and, as they occasionally take wing in the summer, they may have taken up their quarters in the midst of the gold fish, into which they would bore holes in abundance, for they feed upon their prey without previously killing it. If the pond is not at once cleared the enemy may escape detection; for many aquatic insects and their larva pass the winter in a state of torpidity, ensconced in muddy banks. Perhaps "Z. Z. Z." may remember to have seen a few buzzing beetles about his pond during the past summer; and he may now, perhaps, if he looks attentively, see them rise occasionally to take air at their tails on the surface. One thing is pretty certain, the fishes themselves are not pugnacious.—SHIRLEY HIBBERD, Tottenham.

FATTENING PIGS ON LINSEED.

"In a little book, called 'On the Preparation of Cooked Food for the Fattening of Cattle,' by Thomas Harkness, published by Blackwood, I find, at pp. 18—20, 'The Cornwall plan of giving cooked food to cattle. Instead of feeding on oil cake, they mix 23 lbs of crushed Linseed gradually in 21 gallons of boiling water; after which they slowly put in 84 lbs of meal and a little salt, and stir it well for a quarter of an hour; after which it is poured into tin moulds, each holding 7 lbs. The quantities and ingredients before-mentioned would make 36 cakes = 252lbs.

"It also goes on to say that this compound has been tried, weight for weight, and was found superior to oil-cake, and much cheaper, as it would only cost 5½d. per stone of 14 lbs.

"Now, what I want to know is this—whether a large pig, allowed 14 or 16 lbs of this compound per day, mixed with warm water, would not thrive rapidly upon it, and gain from 2 to 3 lbs per day; and, also, whether it would not be superior to barley-meal?—A FARM STUDENT."

[The following reply is from a very competent authority:—"Compounds, such as you describe, have been extensively tried in this county (Cornwall); but I do not apprehend that the results have been generally encouraging. A still more common and better mode of employing Linseed instead of cake has been reducing it to a mucilage by boiling, then mixing it with chaff, and adding meal. This is a simpler process, and has certainly been employed with great advantage in feeding cattle. As regards roots, the expense of steaming does not pay for cattle, though for pigs it cannot

be too highly recommended. Nothing exceeds barley-meal for pigs at the comparative price of the various substances on which they are usually fed. Linseed, indeed, should only be given them when, after weaning, they require greater nourishment than the ordinary food would supply, as its effect on a feeding animal would be to render the pork soft and deficient in the requisite firmness.—W."

TO CORRESPONDENTS.

FLOWER-GARDEN (Kate).—No. 1 very well planted indeed; the edging of *Variegated Alyssum* round *Mangles' Variegated* is new, and would only do for a centre bed; mixed with *Flower of the Day* spoils both. *Convolvulus minor* will be unmanageable there; the *Lobelia* is best. In 3 and 4 very young *Calceolaria* plants must be used; *Amplexicaulis* will not do in either. No. 2 is on the cross-corner style of planting beds, and the beds are very well planted on that principle, the centre across the ground coming in for suiting both ends alike. Our correspondent has got a clear head on these points.

TOMATO COOKERY (A Six-year Subscriber).—There are all the recipes we have in our 14th and 15th Vols. Consult especially No. 362.

GARDENER'S CALENDAR (Suburban).—There is no such publication as you suggest.

CELERY PLANTS (Trentham).—Early-raised Celery, such as yours in May, invariably runs to seed in autumn. Old mortar mixed with turf would be a compost rich enough for Gooseberries and Currants without any dung.

FLUELESS STOVES (M. E. M. and J. T.).—These are always more or less injurious to plants in a greenhouse.

VARIOUS (Vincent L.).—Apple No. 1 is Manks Codlin, and No. 2 Dumelow's Seedling. Leave the Anemone seedlings unmoved. They are quite hardy. Mr. West, Ironmonger, Kingston-on-Thames, makes the Waltonian Case. Plant the Vine in turfy loam as if in the open ground. We shall be glad to see a drawing of your heating-by-gas apparatus.

TOBACCO (Carrig Cathol).—Cut the plants close to the ground, and dry them gradually. Then put them into a tub or box, press them down firmly, and keep in a dry place. There is a *Tree Onion* bearing bulbs on the top of the stem. It is also called the Canada Onion, and by botanists *Allium proliferum*. It is often cultivated for pickling.

ORCHARD-HOUSE FOR £30 (Florist).—No mistake was made in this statement. It is built against a wall, and the whole of the woodwork was obtained, ready cut, at the Winchester Steam Saw Mills. Mr. Clarke, the proprietor of those mills, will supply any one at the same rates. *Dodecatheon* next week.

NAMES OF PLANTS (A Kentish Subscriber).—Your autumn Crocus, we think, is the purple variety of *Colchicum autumnale*. It may be *C. Byzantinum*, or *C. arenarium*, but we cannot be certain from the specimen. Other questions next week. (A Subscriber).—Yours is the common Juniper, *Juniperus communis*. Honeysuckles are twiners, and will rise up a pole to any standard height. They are never grafted. (W. T. Tetby).—Your plant is the *Rhus cotinus*, or Venetian Sumach. This is a hardy shrub, and very ornamental upon the lawn. It flowers freely, and what with its singular-coloured, feathery bracts, which accompany its numerous, tiny flowers, and its peculiar leaves, the whole plant becomes a very interesting object during many months in the year.

ELEMENTS OF BOTANY (A Scottish Reader).—For the Linnæan System, Sir J. E. Smith's *Introduction to Botany*. For the Natural System, Lindley's *School Botany*.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

BIRMINGHAM. December 2nd, 3rd, 4th, and 5th. Sec., J. Morgan, jun., Esq. Entries close November 1st.

COLLINGHAM, NEAR NEWARK. Oct. 21st. Hon. Sec., E. Turton, Esq., South Collingham. Entries close Oct. 14th.

ESSEX. At Colchester, 8th, 9th, and 10th of January, 1857. Secs., G. E. Attwood, and W. A. Warwick.

GLOUCESTERSHIRE. Nov. 26th and 27th. Sec., E. Trinder, Esq., Cirencester. Entries close Nov. 1st.

NOTTINGHAMSHIRE. At Southwell, December 17th and 18th, 1856. Sec., Richard Hawksley, jun. Entries close November 19th.

NOTTINGHAM CENTRAL POULTRY ASSOCIATION. January 13, 14, and 15. Hon. Sec. Frank Bottom. Secretary to the Canary Department, Jno. Hetherington, jun., Sneinton.

PRESTON AND NORTH LANCASHIRE. January 21st and 22nd, 1857. Sec., Ralph Leigh, Esq., 125, Church Street, Preston. Entries close December 13th.

N.B.—Secretaries will oblige us by sending early copies of their lists.

JUDGMENTS ON POULTRY.

AMIDST all the discussions that have arisen respecting excellence in poultry, those on whom has usually devolved the responsibility of publicly deciding on their several merits are certainly justified in believing that the standard acted on has been generally acquiesced in. This remark, however, presupposes two points; first, that during the last five or six years the same main characteristics have been commonly required; and secondly, that although dissentients have frequently protested, yet they have been fairly overruled by the other side. A few words on each of these matters may

not be uninteresting to the readers of THE COTTAGE GARDENER.

It may well be asked whether any marked deviation from the standard by which the first Birmingham Show was judged can be now alleged, beyond the natural and reasonable rise which an increased knowledge and interest in the pursuit required and effected. I certainly believe that an answer in the negative would be correct; nor can I recall to my recollection any breed of fowls where an important characteristic of excellence has undergone alteration during the period alluded to. What satisfied a Poultry Judge in 1850 certainly and properly fails to do so now, as has, likewise, happened with regard to other descriptions of agricultural live stock; but the leading requirements were originally correct, and, consequently, the right course has been throughout pursued.

It is assuredly of importance, both to the breeder and the exhibitor of poultry, that this should be admitted; nor is it, indeed, a matter of less significance that a very general assent appears to have been accorded to the individual acts by which this standard has been since applied. That disappointed exhibitors will object, ever has and ever will be the case so long as human nature retains the same dispositions as now influence it. But has there been just ground for assigning incompetency or partiality to those on whom the thankless task of arbitration has devolved? Have they been found to err either in the assumed standard or its particular application? I speak, of course, of those whose names have commonly appeared in this capacity at our larger Exhibitions, since, at meetings of a less important character, it has frequently occurred, from one cause or another, that persons have unwillingly been induced to assume the post without the experience that should qualify them for it. Committees are not blameless on such occasions, and oftentimes have they subsequently found themselves in troubled waters from this very cause.

It is not to be inferred from these remarks that no error can be discovered in such decisions; but even where such may be proved, and the case is of rare, very rare occurrence, it is seldom that some good plea may not be adduced in defence. The hours for adjudication have been too limited, or the amount of work too great, so that mere bodily fatigue and the darkening shades of evening have caused greater haste than accuracy demanded; these and other equally valid excuses may be given, but happily they are but seldom required.

The written law (*lex scripta*) by which the merits of poultry should be determined on has been objected to, and the exact concurrence in some minor details of a sufficiently numerous body of competent persons has been regarded as difficult to be obtained. Well, this might have been the case, or, on the contrary, we might have sooner reached the goal we have been aiming at had such a body been called into existence. But what I would urge is this—the points on which assent is required have been now determined by a steady and continued acquiescence in the rules by which judgments were delivered six years ago, and which, even then, were, in most instances, based on the experience of many a former year. If we have not attained to the undeviating rigidity of a law of the Medes and Persians, the relaxation is only tolerated where a still higher standard may seem attainable through the increasing skill, application, and experience of the present and the future.

This is no slight achievement when we recollect the warm discussions that have arisen and been settled, and the charges, moreover, that were once levelled at every poultry fancier, of his being influenced by the most wayward freaks of prejudice or of fancy, and utterly disinclined to regulate his proceedings by any definite rule.

There is one gentleman, indeed, to whom all who are interested in poultry matters are deeply indebted; not less, indeed, for his constant assiduity on behalf of that pursuit than for his ready compliance with every wish for explanation or instruction. I need hardly say that I refer to Mr. Hewitt, whose unremitting labours and acknowledged capacity have, probably, done more to establish present uniformity than the united labours of all those who have written or spoken on that subject.

Nor let it be forgotten what is justly owed to the Birmingham Society on the same score. The labour, it may

be fairly said, was there first undertaken, and how wisely and how liberally the work has been ever since carried on by that body is beyond all question. When we are told, therefore, that its expenditure has exceeded the receipts, and we remember for what object this outlay has been incurred, those who have benefited should at once come forward to its aid, and on the principle, moreover, that "bis dat qui cito dat." There is, in truth, but one reply to the inquiry, "What would have been the present position of our domestic poultry had not its cause been thus ably and munificently advocated at Birmingham?" and that is, "Not that which it has now reached."—W.

(To be continued.)

BIRMINGHAM POULTRY SHOW PRIZE LIST.

For the following we are indebted to the *Midland Counties Herald*, and we will preface it with this extract from the letter of a well-known Pigeon breeder.

"I must own at first I was sorely puzzled to discover why the selection of varieties (of Pigeons) should be made. I inquired of many old and first-rate fanciers why *Fantails* should be specified, to the exclusion of *Barbs*; *Nuns* to the exclusion of *Owls*; *Jacobins* to *Turbits*; or *Balds* and *Beards* to *Mottled Tumblers*; but all, like myself, felt completely at sea for a reason."

He then suggests a reason, which we do not feel justified in publishing.

"The total amount offered in prizes for Domestic Poultry is the same as in 1855; but some judicious modifications have been made in its distribution. The prizes for Golden and Silver-spangled and Pencilled Hamburgs, and Black, Golden, and Silver Polish, remain as last year; but the third prize has been withdrawn in both classes for Polish Fowl of any other variety. In the four classes for Spanish and Coloured Dorkings, first, second, third, and fourth prizes of £4, £3, £2, and £1 respectively, are now offered—a change which will prove acceptable to many of the leading supporters of the Show, and which was proved to be desirable by the extent and character of the competition. The third prizes for White Dorkings, Black and White Cochins, 'Brahma Pootra,' and Malay, are withheld; but in the classes for single Cocks there is a third prize of 10s., for Spanish, Dorking, and Game Fowls. The subjoined note appears to the classes for Brown and Partridge-feathered Cochins:—'It has been proposed to place at the disposal of the Council a sufficient sum to offer Two Silver Cups, instead of First Prizes, in the two preceding classes.' Seven Silver Cups, of the value of Ten Guineas each, will be awarded, instead of money prizes, for the best pen of Pencilled Hamburg, Spangled Hamburg, Polish, Spanish, Dorking, Cochin-China, and Game. The ordinary classes for Bantams remain unchanged; but, instead of one Silver Cup of the value of Ten Guineas, it has been determined to offer two of the value of Five Guineas each; the first for the best pen of Gold or Silver-laced, and the second for the best pen of any other variety. The prizes for Geese, Ducks, and Turkeys have not been altered. In Pigeons, the Balds and Beards will each have a distinct class; and Two Silver Cups, of the value of Five Guineas each, will also be awarded—one for the best three pens of Almond Tumblers, Carriers, and Pouters; and the other for the best five pens of Fantails, Nuns, Balds or Beards, Jacobins, and Trumpeters. This change is in accordance with the expressed wishes of many of the leading amateurs throughout the country, and will be found a great improvement upon the arrangement of last year—establishing, in fact, an intelligible rule in the place of that which was uncertain and unsatisfactory, and which placed the Judges in an unfavourable position.

"No prizes are this year offered for Cottagers' Poultry, some objections, apparently well founded, having been made with respect to the evasion of the rules laid down for the competition in this department, and especially as relates to the ownership of the fowls entered. The following new regulation, which was, however, communicated to the Judges of last year by a special resolution of the General Purposes Committee, has been added:—

"It will be an instruction to the Judges of Poultry to take into consideration the ages of the fowls sent for com-

petition, as set forth from the certificates in the books prepared for their guidance; and if perfectly satisfied that in any case the age has been incorrectly stated, to disqualify such fowls; and no appeals from the decisions of the Judges shall be entertained, either with regard to disqualifications on account of age, or in consequence of the entries having been made in a wrong class, or upon any other grounds whatsoever."

"The regulation as to the proprietorship of fowls is confined to the simple condition that 'all the specimens must be *bona fide* the property of the exhibitor.' The arrangement by which the cock or the hens in a pen might be sold separately is not continued, as it was found to interfere greatly with the despatch of the birds at the close of the Show. It has been determined, also, to strike out the sentence by which it was intended to confine the Show to amateurs only—a rule which has always been unnecessary, and has led to much ill-feeling. Exhibitors of Pigeons only may enter six pens in any of the ordinary classes, or eight pens in competition for the two Silver Cups, but not more than two pens of any one variety in a class. The conditions upon which entries of Poultry can be made are set forth in our notice of the Prize Lists for Stock; but we may mention here that, notwithstanding the payment on each pen, the old rule remains in force which limits the subscriber to two pens in any one class, and not more than four pens in the whole.

"We have thus noticed the principal features in the new lists; and we would urge upon intending exhibitors that they should not delay to apply to the Secretary for the requisite certificates, as the entries close on the 1st of November, the Show being held in the first instead of the second week in December. This change in the fixture places the Birmingham Meetings one week earlier than those of the Smithfield Club, and we may reasonably anticipate the show of stock will be much larger in consequence."

FANCY PIGEONS.—FIRST DIVISION.

CLASS No. 1.—WATTLED VARIETIES.

(Continued from page 33.)

VARIETY 2.—THE SCANDARON, OR GREAT HORSEMAN (*Columba tuberculosa*).

French.
PIGEON BAGADAIS.

German.
BAGADOTTEN TAUBE.



This is another breed of the Wattled Pigeons; but there appears to be a difference in respect to the size of the birds

and the quantity of the wattle. Mr. Moore, 1735, says the Dutch call this Pigeon Bagadat, he supposes from a corruption of the name of the city of Bagdad. In Turkey he says they are called Bagatins, or Couriers. Bagadotten is the German name for what we call Scandaroons, though they breed them with long, hooked beaks, and but little wattle; while the French, under the name of Bagadais, breed them with straighter beaks, and more wattle. I have met with very fine specimens in France by the name of Swan-necked Egyptians. They are very large Pigeons, almost as large as the best Runts. They are thinly covered with feathers, and these lie very close to the body; neither are the tail and pinion feathers remarkable for length. Their beaks are very long and somewhat bent, and they have a moderate wattle of a whitish colour, and the cere round the eyes is broad and red. The head is flat; the neck long, thin, and much bent; the shoulders are broad; the legs long and large, and they are the most powerful of all Pigeons I have met with. They are heavy, clumsy birds, and appear to have great difficulty in rising; but I have found the young, if kept in exercise, and not allowed to get too fat, to be very swift and excellent homing birds. In the air they reminded me of wild ducks, owing to their scanty plumage and angular form. Many points of the body are left bare, as the front of the neck, and the shoulders of the wings, exposing a red skin. Mine were very good breeders, though they are not generally considered so. Their plumage is usually white, black, blue, or pied.—B. P. BRENT.

BRIDGNORTH EXHIBITION OF POULTRY.

THIS very well-appointed Poultry Show took place on the 9th inst., and was held in the same field as heretofore, the spot being a most appropriate one for the purpose. It is very gratifying to state, that year by year since the first institution of this Society its annual meetings have gradually increased in importance; and it is but common justice to state, this has arisen, in a very great degree, from the indefatigable exertions of the committee, and not less so from the undeviating courtesy and attention manifested to both visitors and exhibitors by the able secretary, Richard Taylor, Esq.

We will now make brief allusion to the birds exhibited and general arrangements. All the poultry were shown in a new variety of exhibition pen, that is, undoubtedly, the most commodious we remember ever to have yet seen as regards the birds themselves, whilst the light and airy character of them (being an oblong square of wire-work throughout) offers the least possible obstruction to both the arbitrators and the visitors, if desirous of obtaining a very close inspection. On the one side is a very convenient door, that opens, and also fastens, similarly to that of a parrot's cage, so that where the additional test of "handling" is deemed advisable, this end is instantly attained without any loss of time or extra trouble. But there is also one other new feature that is a most unique and prominent advantage; when not used, they will fold up entirely into a square the same size as the top of the pen, and occupying only one half inch in thickness. They are galvanized, and, therefore, the appearance of them is unusually cleanly. We understand they are from the design of Mr. Edward Hewitt, of Eden Cottage, Sparkbrook, Birmingham, who again officiated as Judge upon the present occasion, a gentleman who has paid much attention to this feature in Poultry Show management, as, from its forming so considerable an item in the expenses of a committee, his desire was to determine the lowest possible limit to which it could be reduced. It was for this reason Mr. Hawkins, the wire-worker, of Dale End, Birmingham, was consulted in the matter; and it appears that, for the future, any numbers of them are kept on hand for hire to Poultry Societies, at a price that is only a fraction of the amount usually demanded in such cases. A man is always despatched with the pens to superintend both the taking them to the show-field, their firm erection when there, and their removal at its close. They are affixed at the rapid rate of about 100 pens per hour. In cases of limited space an extra upper tier is readily placed on a few common boards above the lower row, as, indeed, was instanced at the Exhibition in question.

A somewhat unusual feature of this Show was, that none but chickens of 1856 could compete for the premiums; another was the very just arrangement in respect of the means adopted to determine the future ownership of "the Silver Cup for the best general collection." The rule was as follows:—

"The Cup will be awarded to the exhibitor who counts the most for prizes, as follows:—

Each 1st prize counts Three points.
Each 2nd prize " Two points.
Each Highly Commended " One point.
Each Commended " Half a point."

We feel great pleasure in giving the final result of this arrangement for the benefit of our readers, as showing the extremely close competition among the nine amateurs alluded to.

	Points.
Mr. Peters, of Birmingham . . .	gained 15½
Mr. Rodbard, of Aldwick Court . .	" 16
Lady Chesterfield	" 10
Mr. Archer, Malvern	" 11
Miss Steele Perkins, Sutton Colefield	" 10
Mr. Wilson	" 1½
Mr. Hopkins, of Mirfield	" 3½
Mr. T. B. Chune, of Coalbrookdale .	" 11½
Mr. Haslewood, of Bridgnorth . .	" 11½

It was also the especial request of the committee "that no prizes whatever (if practicable) should be withheld, and that every pen at all deserving of commendation should be individually distinguished, so that each might finally affect the award for the Cup." The *Buff Cocks* were truly excellent, and the majority were far more advanced to maturity than we anticipated from the adverse and late spring of the present year. The *Grey Dorkings* were far superior to this class generally, and most of the competing groups bore strong proof of very careful breeding. The *Game* class was very good; many were in first-rate condition; but otherwise perfect pens lost all their hope of success from inattention to matching the colour of their legs. The *Hamburgs* were evidently birds obtained by most anxious and attentive breeding; white ear-lobes were (we might almost say) everywhere common. The *Polands* were well represented, the Silvers particularly. The *Bantams* were both numerous and good. The Black ones were pre-eminently so. *Turkeys*, *Geese*, and *Ducks* formed very capital classes; indeed, it was chiefly the superiority in these latter classes that finally determined the ownership of the plate premium.

The tent was both extensive and excellent; but, most fortunately, a peculiarly fine day rewarded the exertions of the committee. The attendance of the nobility, gentry, and agriculturists was far beyond any precedent of the Society, and, of necessity, the funds progressed proportionably. The bells of the churches rang continuously, and a military band enlivened the whole proceeding.

On inquiry, we find all the poultry were despatched homewards on the same evening without any accident whatever, that the awards of the Judge were satisfactory, and that not one incident occurred to mar the success of the whole affair. We hope like results may mark future meetings.

WORCESTER POULTRY SHOW.

IF other Shows failed, yet poultry will at all times form part now of agricultural meetings, because it is fast assuming its proper position as a good help at times, and a natural pursuit always, to the agriculturist. Another important feature in it, treated as an adjunct to such meetings, is, that it is remunerative, because it involves so little expense. These Exhibitions will be popular with exhibitors, because the birds are detained only one day. The improvements and alterations that have taken place of late render the expenses of a Show easy of control, and have taken from the old members of committees, who oppose any change, and wish to do all things as their fathers did before them, their only argument—that of risk and expense. We do not pretend to say there were any such on this committee, but we know there are many who hate novelty. A few years since, the necessities for a Poultry Show were so little known, that the projectors found them-

selves in a labyrinth, and were totally unable to count the cost of their undertaking. Times have changed. The proper tent is known; pens may be had at a fixed and moderate charge; competent men are to be had for every department; prize lists are understood; and what with subscriptions, entrance money, and pen money, all risk has ceased. An agricultural meeting is not complete without poultry. The agriculturist, it may be the tyro, can see the sort of horse, cow, sheep, or pig he should choose. He may become wise by marking the wisdom of the Judges. Implements of every kind, from a steam plough to a hand machine, meet his eye. Seeds are provided for him of the same sort as the roots that are honourably distinguished; and, if this were all, there would still be something wanting. He must also see what sort of fowls he must keep. If there is more liberality in one pursuit than another it is in farming. The successful experiments of one become the property of all, and it is in this particular that a purely agricultural meeting stands alone. There is more real business, truth, and candour amongst those who cultivate the land than there would be in the association of an equal number of members of any other pursuit. Whatever information there can be imparted from one to the other is freely given, and, as everything is represented, every knowledge is to be gained.

We have deemed these remarks necessary, because this is the first time poultry has formed part of the Worcestershire County Meeting. It was fair to expect some very good birds. Worcestershire has Mr. Archer's Hamburgs, Mrs. Herbert's Cochins, its own Pile Game, and, if more were wanted, part of Birmingham is in the county. Mr. Archer gained the piece of plate for the best collection. This gentleman is a poultry Proteus or butterfly. He changes or skips his breeds at will. After reigning over Silver Hamburgs, he won at Anerley with Gold, and now he headed the list of *Dorkings*. His *Golden Hamburgs* were again better than his *Silvers*, and, unless he can show better birds of this last breed, his days are numbered as leader of the class. He showed some good *Silver-spangled*.

Mrs. Herbert's old reputation was well sustained. She showed an exquisite pen of *White Cochins*, and a pen of *Grouse-coloured* almost of equal merit. We think these latter will be heard of again if they are shown in equally good condition. We must speak highly of the *Buff Cochins*, especially those belonging to Mr. Chase. They are the best chickens of 1856 that we have seen. The *Game* classes brought us nothing but disappointment. It is true Mr. France's birds were very good; but we had looked for Piles "plentiful as blackberries," instead of which but five pens competed. We are enabled to speak highly of the *Dorkings*, but can say but little for the *Spanish*. The *Geese*, *Turkeys*, and *Sebright Bantams* were very good. Every variety of Duck was well represented, and there were *Call Ducks* of singular merit. To those who can afford to indulge fancies these birds offer attractions, as they are ornamental and prolific. Their size precludes them from becoming the denizens of the farm-yard, where profit is the first consideration. The *Aylesbury Ducks* were well chosen for size, but they lacked the pale bills so necessary to success in competition. *Polands* were very good, especially a pen belonging to Mr. E. B. Guest, Black with white top-knots. These birds were larger, and appeared to have more strength and weight than belong ordinarily to this breed.

Liberal prizes were offered to cottagers. In many Societies pains are taken, and every inducement is offered, to make them exhibitors, but all in vain. It was so in this instance. Six prizes; seven exhibitors. Dr. Brown, of Edinburgh, toasted a lady after dinner every day during fifteen years. One day he omitted it. When a friend remarked on such a rare occurrence, he said he had toasted her for fifteen years without making her "Brown," and, therefore, gave her up. We have spent seven years, some labour, and all our eloquence in showing cottagers their interests. If they will not see them, why, then, like Dr. Brown, we give it up. The Judge was Mr. Baily, London.

BIRMINGHAM POULTRY SHOW.—A Silver Cup of the value of six guineas will be awarded to the best Brown or Partridge-feathered Cochins in Class 25, and a similar Cup to Chickens of the same breeds in Class 26.

OUR LETTER BOX.

MORTALITY AMONG CHICKENS.—"I have had some 120 Speckled, Silver, and Golden Hamburg chickens hatched this season, and have only reared *nine*. They are very healthy for the first ten or twelve days, and then they begin to scream, their wings droop, and they die off in three or four days, and are perfect skeletons. Warmth, oatmeal cooked and raw, scraped meat, bread crumbs, and milk, also letting them out as much as possible when the weather is dry, have been tried. I have now my last clutch four days old. How am I to rear them?—H. M. R."

[Although it may have a "sound unmusical" to ears polite, we are compelled to say we think the chickens are troubled with lice. You say they are let out as much as possible. How are they confined? In damp weather the rip under which the hen and chickens are put should be in a shed, the floor of which should be of dry dust. The bars of the rip should allow the chickens to go in and out as they will, and they will then dust themselves, which is the natural cure, and resorted to by Pheasants and Partridges. A drop or two of oil put on the wing where it joins to the body, and the same quantity on the back of the head, kills the lice. Your feeding is good except the meat. If you allow the chickens their liberty, and, as the only difference in their food, give them a little bread and beer in damp weather, we do not see why you should lose any.]

DELICACY OF DORKINGS (A. M. S.).—The great, perhaps, we should be more correct in saying, the only drawback to Dorkings is their delicacy, especially on clay soils or situations at all damp. If exhibition is not an object with the writer, the cross with a Cochin hen will be found a useful table fowl, and much harder than the pure breed. The birds described are evidently suffering from that bane of poultry-yards, roup. The treatment has been several times described in the last two volumes; and warm, dry housing is essential.

PRODUCTIVE EGGS FROM SINGLE DUCKS (A Subscriber).—In reply to a correspondent who inquires how long the eggs of a Duck will continue productive after separation from the Drake, I can only state that I have never tried the experiment with a Duck, but should think it probable that the eggs would continue fertile until the end of the clutch that the Duck was laying when with the Drake. I know this to be the case with Turkeys, and have hatched eggs from Cochin hens six weeks after their separation from the male bird.—W. B. T.

FEATHERS OF HAMBURG COCK.—(W. H.).—All the feathers sent belong to Golden *Spangled* Hamburgs. Our difference is that you call them *Pencilled*. All the feathers may form part of the plumage of a very first-class bird. The breast should be spangled, but the spangling need not be as accurate or distinct as that of the hens of the same breed. His saddle will be better if he gets some dark stripes in it. Do not kill your handsome cock.

RELATIVE FATTENING QUALITIES OF WHITE AND YELLOW INDIAN CORN.—(Alpha).—There is a much larger proportion of oil in the yellow variety than in the white; and the latter would, therefore, meet the wants of the inquirer. This diversity of constitution led to an amusing scientific quarrel between two eminent analytical chemists, each of whom declared the other to be in error. It was eventually discovered that they had been analysing the different varieties. It is impossible to hazard an opinion on the death of the fowl from the symptoms enumerated.—W. B. T.

BRICK FLOOR OF POULTRY-HOUSE.—(A Subscriber).—Cover it with sand four or five inches deep, and rake off the dung every morning. Your *Dorking Pullets* have the roup; give them some Balsam of Copaiba as recommended in former numbers.

CHICKEN FALLING ON ITS SIDE (C. J. E.).—A small blood-vessel is ruptured on the brain probably. Put it on a low diet of boiled rice, mashed potatoes, and plenty of green food. Do not let it have any hard corn, and very little barley-meal.

LONDON MARKETS.—OCTOBER 20TH.

COVENT GARDEN.


Supply of home-grown fruit very limited, the markets being mainly supported by foreign produce, of which very heavy consignments have come to hand this week, comprising blue and white *Grapes* from Rotterdam, *Apples* and *Pears* from the Channel Islands and various parts of France, the *Pears* being *Duchesse d'Angouleme*, *Glout Morceau*, *Brown Beurre*, *Easter Beurre*, *Crassane*, *Bonne Louise*, and a few *Marie Louise*. Of vegetables there is quite sufficient for the demand; but we are sorry to find the late wet weather has developed the Potato disease to a considerable extent in some parts, particularly in the north, so that we may expect an advance in prices as soon as the present heavy stocks are diminished, or towards the end of the month.

POULTRY.

We have no difference to quote from last week. Grouse are, if anything, more plentiful, while Partridges are short; and, hitherto, the supply of Pheasants speaks of a bad breeding time.

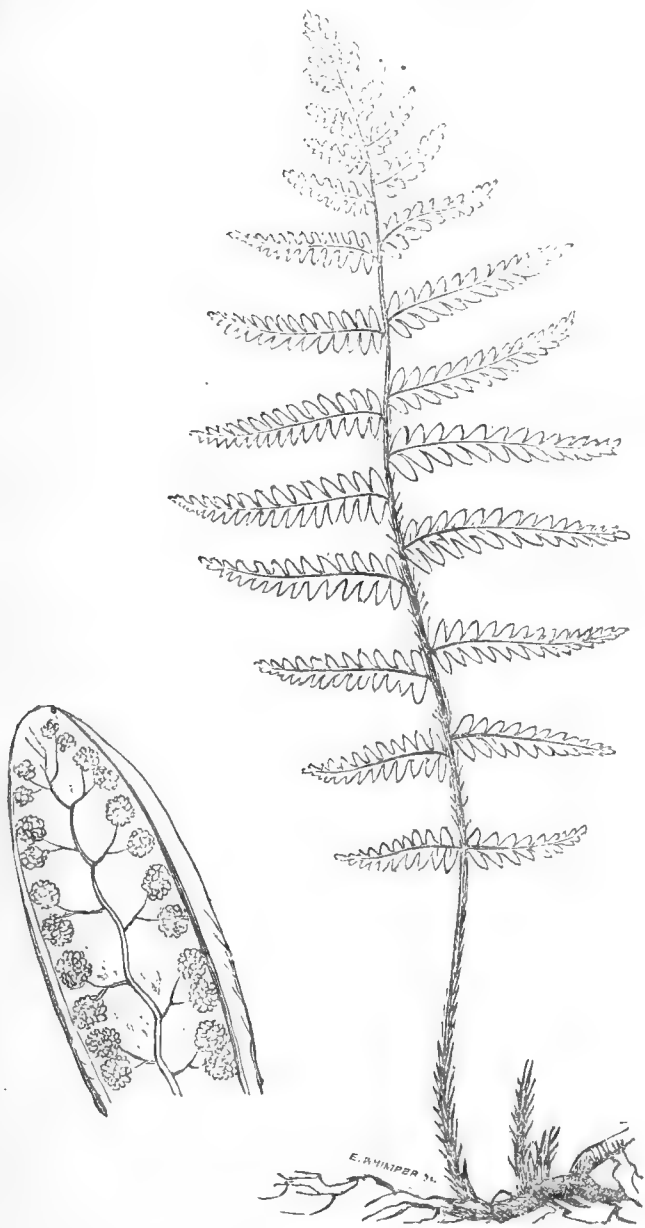
Large Fowls 5s. 6d. to 5s. 6d. each.	Hares 3s. 6d. to 3s. 6d. each.
Smaller do 3s. 6d. to 4s. 0d. "	Ducks 3s. 0d. to 0s. 0d. "
Chickens .. 2s. 3d. to 2s. 6d. "	Geese 6s. 0d. to 6s. 6d. "
Grouse 2s. 0d. to 2s. 3d. "	Pigeons 8d. to 9d. "
Partridges.. 2s. 0d. to 2s. 3d. "	Rabbits 1s. 5d. to 0s. 0d. "
Pheasants .. 4s. 0d. to 4s. 3d. "	Wild ditto 10d. to 1s. "

WEEKLY CALENDAR.

Day of Month.	Day of Week.	OCT. 28—NOV. 3, 1856.	WEATHER NEAR LONDON IN 1855.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
28	Tu	ST. SIMON AND ST. JUDE.	29.714—29.685	53—40	N.	.03	49 a 6	39 a 4	sets.		16 8	302
29	W	The marbled chestnut Moth.	29.523—29.210	52—46	N.E.	.63	51	37	4 a 30	1	16 11	303
30	Th	The autumnal dagger Moth.	29.217—29.083	53—46	N.E.	.93	53	35	4 47	2	16 14	304
31	F	The streak Moth.	29.528—29.300	47—34	N.	.22	54	33	5 13	3	16 16	305
1	S	ALL SAINTS.	29.704—29.667	44—27	N.	.00	56	32	5 48	4	16 18	306
2	SUN	24 SUNDAY AFTER TRINITY.	29.727—29.579	47—34	N.W.	.49	53	30	6 33	5	16 18	307
3	M	The red-green carpet Moth.	29.877—29.616	46—33	N.E.	.03	VII	28	7 44	6	16 18	308

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 54.2°, and 37.9°, respectively. The greatest heat, 67°, occurred on the 31st, in 1854; and the lowest cold, 20°, on the 3rd, in 1845. During the period 97 days were fine, and on 99 rain fell.

LASTRÆA THELYPTERIS.



THIS has been called by different botanists *Acrostichum*, *Aspidium*, *Athyrium*, *Hemestheum*, *Polypodium*, and *Polystichum*; but they all agree in giving it the specific name of *Thelypteris*, which is literally the Woman or Lady Fern. In English it is known as the Marsh Shield Fern, Marsh Polypody, and Marsh Fern.

Root widely creeping, by means of slender, blackish, thread-shaped, smooth, or slightly downy runners. From various points in these arise irregularly the fronds. These are erect, delicate, deep green, usually smooth, but occasionally slightly hairy. The barren fronds are about one foot high, but the fertile fronds vary from two to four feet in height. Their stem is slender, and

mostly naked, but sometimes slightly scaly, and the lower half without leaflets. These, especially when barren, grow markedly horizontally, are narrow spear-head shaped, deeply and regularly pinnatifid, partially opposite, but mostly alternate; the barren segments blunt, and slightly scalloped; the fertile segments narrower, more pointed, with the edges rolled back. The mid-vein zigzagged, and sometimes very hairy. The lateral veins divide into two branches about half-way between the mid-vein and margin of the segment, and on the fertile fronds each branch of the lateral veins bears a small round mass of the fructification. Each mass is dark brown, at first covered by a thin, white, torn, kidney-shaped cover (*indusium*), fixed by the centre, but which soon is elevated and shed. The masses eventually run together into lines, and sometimes nearly cover the segment.

It is found in boggy meadows and marshes, especially where the soil is gravelly, but is rare, and though found in different parts of the British Islands, is very local. It is more common in Scotland than in England or Ireland. In *England*, on Learmouth Bogs, in Northumberland; near Settle, in Yorkshire; at Allesley, in Warwickshire; on Knutsford Moor and New Church Bog, near Over, in Cheshire; on Oxtou Bogs, in Nottinghamshire; in Windsor Park and Sunning Hill Wells, in Berkshire; in the valley below Cæsar's Camp, on Wimbledon Common; and on Leath Hill, in Surrey; in a bog on Waterdown Forest, near Tunbridge Wells; at Belton, and near Bungay, in Suffolk; at St. Faith's, Newton Bogs, near Norwich; and in Somersetshire and Sussex. In *Wales*, in a moist dell at the foot of Snowdon, near Llanberris; on the border of the lake near Red Wharf; and at Beaumaris, in Anglesea. In *Ireland*, on the marshes at Glenree, in Wicklow, and at Neveruss, Killarney.

This Fern was first noticed as an English plant by Ray. He mentions it in his *Synopsis Methodica Stirpium Britannicarum*, as the *Filix minor palustris repens*, Creeping Water Fern, or Lesser Marsh Fern.

Mr. Reeve informs us that the *Lastræa thelypteris* will be found to thrive pretty well under pot-culture, and with ordinary care will become a very elegant object. Being one of those Ferns which choose a marshy place for their natural habitation, it will be found very useful for planting upon the base of the rockery, where, when once established, it will soon spread and show its beauty, for, when seen in a mass, it is a very handsome

Fern. It produces its fertile fronds, which are the finest, in much greater abundance where it has full scope for its roots, delighting as it does in being permitted to creep about where it chooses. It may, however, be treated very successfully under pot-culture; but, as it will be seen, from its creeping nature, a pan will be far better to grow it in than any other vessel, as it does not require depth so much as surface-room. The drainage in the pan must be formed by a layer of crocks at the bottom, then a layer of coarse, fibry peat, filling half the depth of the pan, and the remainder with a compost of two-thirds turfy peat, and one-third of leaf-mould, with a free admixture of silver sand, and a few pieces of crock broken very small. In this compost, with a free supply of water, the plant will flourish as if at home. The same compost will suit it for planting out. It may be propagated easily by division, and may be grown also under glass. The plants in pots or pans will require a slight protection through the winter.

RICHMOND NURSERY.

Mr. HARRIS gave up his nursery at Richmond, and Mr. Kinghorn, from St. Margaret's, Isleworth, has opened a new nursery this season, a little out of Richmond, on the Sheen Road. It consists of five acres of rich old market-garden ground, formerly for many years in the possession of the late Mr. Adams.

He put up a fine span-roofed show-house, with the end facing the road, a large seed-shop at the end of his house, both facing the road, and several additions behind. He also made a most convenient arrangement for carriage customers—a half-moon-sweep drive, with a gate at each end, by which a carriage may get up to his front door, to the shop, or to the show-house. The body of the half-moon, between his fronts and the main road, is planted, first with specimens of rare Conifers and other fashionable plants; then, between them, a large collection of Scarlet Geraniums in tall, bushy specimens—the first thing of the kind I have seen in front of a nursery. As this goes to the very root of a subject which I have been fanning for years, and knowing that the more the fire is stirred the brighter it will burn, I resolved on calling here the first time I saw those large Geraniums from the top of an omnibus on my way to London. The straight side of the half-moon is next to the public road, and here a broad band of Mignonette invites the visitor to smell farther on—a good idea. Behind the Mignonette is a thick, low, bushy row of the old Purple *Zelinda* Dahlia, as much as to say that the master knows the style of ribbon-planting, like the rest of us.

We owe some of our very best bedding Geraniums to Mr. Kinghorn—*Flower of the Day*, *Commander-in-Chief*, *Cerise Unique*, and others that way; and this season we had his *General Pelissier*, a great improvement on *Commander-in-Chief*; his *Countess of Warwick*, another rise on the *Attractions*; and *Anne*, named after one of his daughters, will beat out *Flower of the Day*. The leaf and habit are the same in both; but *Anne* has a fine scarlet truss.

Here, however, I have a word to put in from the "Chronicles of the Experimental." No one should rely on such novelties as these the first season. You may be sure that, for the last twelve or eighteen months, the old plant or plants have been stimulated to the very last pulse to get cuttings from; that as soon as each cutting had a root the top was cut off for another start, and so on, start and cut, cut and start again, as long as there is

a drop of blood remaining. But, hard as that must be, it is only the first of a series of hard treatment. The London trade jump at all good trade-plants like these. They order them in by the dozen, or by the score, or by the hundred, according to the extent of their orders or country customers; and no sooner does a "coming-out" plant come up to London than they have a "pull" at it there, and so they ought—they pay liberal prices. After the second strain on the already exhausted constitution of a seedling, away they go all over the provinces to amateurs and country nurserymen, and each must have his "pull" before "proof." By this time there is little energy left for proof. The little plants ought rather to be nursed like half-drowned people till they get round again. That is just the very thing that we were doing at the Experimental with one-third of the contributions, from bad packing and the proverbial delays of railroads, till the harvest was nearly over about London. What proofs, therefore, we were able to guess at may have to be revised another year, and, from the great demand for the new seedlings from this nursery, very few would be able this season to decide one way or another; but I could see and judge from plants which were reserved to make a show at home.

The best thing one can say of a new Geranium near London is, that it will soon find its way to Covent Garden. *Pelissier* will be one of that number. *Countess of Warwick* is destined for large pot-specimens, and no one would plant *Flower of the Day* who had as many plants of *Anne*. It has that peculiar soft-like look by which the *Flower of the Day* forced itself into general notice. Many of the variegated kinds are brighter and have better flowers than the *Flower of the Day*, without being able to make their way half so much into good society.

This was my first interview with Mr. Kinghorn; but I have wanted a leaf out of his books for ever so long. He told me that the *Flower of the Day* was variegated from the seed-leaf, not a variegated sport, as I always thought it must have been, from its disposition for making plain or green shoots, like older kinds which came from sports. His new seedling Geranium, called *Prim*, is not to come out next spring. I think he told me so; but his seedlings are kept over at St. Margaret's till he is sure of them. He had two kinds then in flower,—the best of their stamps yet seen. One, a large white one, with a blush tinge, is an improvement of *Triomphe de Mont Rouge*. The florists will be proud of it, as it comes up to their points, or most of them, and it is the largest individual flower I have seen of that class,—nearly an inch and a half across the circle. *Surprise* has the largest flower if measured from ear to ear; but then it is a gaping flower, and another turn of the cross would have made a poor *Nosegay* of it. I mean poor in respect to the crowding of flowers in a truss. The other is the best of the *Lucia rosea* breed, but not exactly that very breed. It belongs to a *Unique* which was swallowed up in the rage for *Lucia* on its first appearance. The Colchester and Ipswich florists know the kind I mean better than the Londoners. They had it as *Mrs. Rotham's Pet* just as *Lucia rosea* came out, and the latter drowned the *Pet*; but here Mr. Kinghorn has an improvement on it, which will make a most lovely drawing-room plant, and seems too good to venture in a bed out of doors for fear of the sun.

Among the specimens of Scarlet Geraniums out in the borders (and there were scores of them), *Punch* was the very best in habit, in profusion of bloom, and it was as high as most of them, say about four feet, and four feet across the bottom; but he had it under the name of *Collins' Superb*. I had *Collins' Superb* from the very best gardener in England in a contribution, and it would make an edging to a bed of young *Tom Thumbs*. Where is Mr. Collins? He could put us right; but, right

or wrong, there is no mistake about Mr. Kinghorn having the best kind, the real true *Punch* from Shrubland Park. I have said how different seedlings of it got about. He has been raising lots of seedlings of the *Shrubland Scarlet*, and proved what I have been saying about them for years—that the seedlings take only three forms, and that one of them is hardly worth growing. This, therefore, would make a lawful species for those who believe a natural difference to be between a species and a variety, a point which I believe of very little or no practical use whatever.

Next to the Geraniums we looked over his *Fuchsias*, as I was desirous of doing with a good practical gardener like him. The first thing I learned among them is well worthy of being remembered, namely, that Story's *Queen Victoria*, which has a light corolla, is the best of them for being seen by candle-light, and that no *Fuchsia* is more striking on the drawing-room table at night. *Autocrat*, in the way of *Bank's Glory*, but not so good for a florist, is an excellent pot-plant. *Venus de Medici*, in better style than the one I noticed at the Crystal Palace Show. This is the half-way from the Reds to the light ones. A good plant of this makes a fine show in a greenhouse. *Omar Pacha*, *Bank's Favourite*, *Bank's Glory*, *Prince Albert*, *Duchess of Lancaster*, and *Hendersonii*, a double dark kind, were all very showy, and among the best out of ever so many kinds. *Fuchsia Dominiana* was just coming into bloom by the end of September, and would go on flowering till next March. A fine lot of the new-fruited plant, *Eugenia ugni*; a ditto of the *Catalonian Jasmine* standards; a great number of popular show-house plants; and one specimen of an oldish Nosegay, which is new about London, the *Red Nosegay*. It was raised long since by Mr. Patrick, late gardener at Stoke Pogis, Bucks, and is little known except in that neighbourhood; but, now that a rage is running after Nosegays, every one of them must be registered. There is a Variegated *Nosegay* at Clapton Nursery called *Sarah*, and a far better Variegated *Nosegay*, a real fine thing, at the Messrs. Jackson, of Kingston. Three of them in one day is better than none at all for the three pounds which Sir Joseph Paxton offered for them. The *Red Nosegay* will now be sought after for a breeder, as *Baron Hugel* was three or four years ago; but, to prevent repeated disappointment, I may just say that both are now exhausted with crossing all kinds with them. Great improvements on both are in existence, and with the *Baron* a fresh set of cross-breeders have begun this last summer for the first time. One man told me he had crossed every Geranium in the country with *Baron Hugel*, and "every one of them took," meaning, that no pollen comes amiss to the *Baron*, which is true enough. Another man told me that he had thrown the old *Red Nosegay* away after getting "much out of it;" but for mere amusement there are not two better breeders to be had. Anything from them will be welcome in many parts of the country.

When Mr. Kinghorn removes all his seedlings from St. Margaret's to this nursery we may look for Nosegay Geraniums among them to suit all tastes in the seedling exhibition way.

Along both sides of a main central walk, which passes down through the centre of the grounds, I noticed many good things, beginning with Scotch seedlings of *Abies Douglasii*, very good seedling *Pentstemons*, one of which, a dwarf, bushy kind, is called after Mr. McEwen; strong, large patches of the real *Linum grandiflorum*, which, after ripening some good seeds, Mr. Kinghorn intended to lift and put into pots, to be kept like Verbenas through the winter, and next spring to get thousands of cuttings from for the London trade and all his customers. He says they will come from cuttings in the spring just as freely as Verbenas. He also told me, what I was

aware of, that there are two or three very indifferent kinds of it about the country. A person sent me a handful of seedlings of it from a midland county in the midst of the hot weather. They did very well, however; but two out of three of them had pale, dirty, violet flowers. As soon as I got home I took a leaf out of Mr. Kinghorn's book, took up my plants of *Linum grandiflorum*, and, although they were and are still in seed, I think they will keep over the winter easy enough, and produce cuttings after his fashion, which will begin to bloom as soon as they are turned into the borders in May, and continue to the end of October. With a little management my specimen plant, which was put by and kept from blooming, is now allowed to bloom, which it does most willingly, on the window-sill, where it stood all the summer. If one of the great exhibitors got hold of this plant last August he would turn it out next June two feet in diameter, eighteen inches high, and with from two to five hundred flowers wide open on a show-day. It is not too late yet to pot it from the open borders, and I am almost certain that it does not produce seeds enough to hinder it from keeping over the first winter; and after that it may be had from cuttings, like other bedding-plants. If I had not been so lucky as to have made acquaintance with Mr. Kinghorn we should have lost all these chances for this season at least, and he would have the whole run of the trade next season with such plants of it as he could warrant to be true to kind. He says, however, that there will be such a demand for it next spring as will keep the whole trade on a trot.

His seedling *Hollyhocks* are first-rate for the borders of the pleasure-grounds; but he has the advantage over the florists, from his being a first-rate flower-gardener himself. He knows what kinds and colours come in best; and he only grows flower-garden Dahlias, such as will stand "wind and weather" without "cooking." He has a good dwarf *Zelinda* of his own raising, about the size and habit of the Purple *Zelinda*; but the flower is a *Lateritia* colour, and it must not be planted along with Purples of the same strain.

A gay, tall, shrubby-plant, *Pyrethrum uliginosum*, made the borders look blooming at that late season. Among the best suit of *Marigolds* I have seen there was a new shade of colour in one of his *African Marigolds*, which, if it will come true from seed, will be in constant demand for the flower-gardens. But the greatest hint I received this year was from some experiments which he took in hand this season with basket-plants or trailers. He made quite a "discovery," which he then had on "exhibition" in front of his house—a flower-box to fill the sill of a window, which window is about three feet from the ground; the space between the edge of the box to near the ground was one whole mass of bright, white flowers, not large, but so close together as to make one uniform face: the sun thus bleached the flowers of *Nierembergia filicalis*.
D. BEATON.

DAHLIAS FOR FLOWER-BORDERS AND FLOWER-BEDS.

I WRITE this for the sake of endeavouring to meet a great number of inquiries, merely premising that what I shall say has reference solely to the obtaining of dense masses of bloom, and not at all applicable to the culture of the Dahlia as a florist's flower. Specific directions have been given for this latter purpose, and these must be adhered to to secure fine specimens of individual blooms; but such attention is not only unnecessary for, but many points of the management would neutralise, the obtaining of great quantities of flowers. I choose the present time, because, first, many of the ideas may yet be tested by observation; and, secondly, to afford

those who contemplate such a course of culture to make their arrangements during the winter and spring.

1. *Tall Dahlias for Shrubbery and other Borders.—To have them Early.*—Having had a good show in the last week of July and onward to the present middle of October, with no signs of stopping until the frost catches them, I will shortly state the processes adopted, not thinking them, by any means, the best, but yet as combining certain economical advantages. Towards the end of March the roots were brought from a cool shed, and placed on the floor of a Vinery at work, and a little light, fine leaf-mould *hirsled* in among them, and a syringing given them once a day or so. By the first week in April they were making shoots. Those I wanted to increase much were taken off, and struck in a moderate hotbed in the usual way. Those that there were plenty of were merely cut off with a portion of the tuber adhering, and were placed separately in small pots, or a number in shallow, portable boxes, using light loam and leaf-mould. They soon rooted, and began to grow freely, and then were removed to a cooler place, where they would have more light and air. Only one individual shoot was left on each piece of tuber; and those raised by cuttings were grown in the same way, one shoot being taken only. By the end of April the pots, in general, were getting full of roots, and the boxes were in much the same state. Early Dahlia plants in small pots suffer much from any stagnation in growth then; and to avoid this, and also to obtain the possession of empty pots, &c., the plants were all turned out into a cold pit in rows about a foot apart, and from six inches and onward apart in the row. The bottom of the pit was as hard as it could well be made. The compost in which they were planted was loam and rough, decayed, hotbed dung and leaves. A glass light was put over them for a week or so, and then straw covers protected them at night until the end of May and the first days of June, leaving the covering off for some time altogether, as other matters prevented my planting them until then. Most of the plants were strong, and ranging from fifteen to thirty inches in height. The holes were dug, a stake fastened in each, and a couple of shovelful of loam and rotten dung placed to each; the plants were lifted carefully with a five-pronged fork, the earth kept adhering pretty well to the roots, carried to the place, planted, tied, well-watered, syringed during sunshine for a couple of days; and, with the exception of watering twice in the hot weather, cutting off a few of the smaller central side-shoots, removing a number of the larger leaves, and hasping the side-flowering shoots to the one stake, and removing decayed flowers now and then, little or nothing more was required.

Some of our readers may not know what "*hasping*" is; and, though I have not coined the word, I will try and explain it. Suppose you had a nice Dahlia or other plant, say with five shoots, or the central one and four others nearly equidistant all round. You have a neat stick, to which you tie the central one, and, were there no danger of any of these side-shoots breaking off from the main shoot by its own weight, or the added weight of dew or rain, or the force of the wind, very likely the plant would look better without any more tying at all; and this easy, natural, graceful appearance, in unison with security, is what we obtain by *hasping*, that is, fixing one end of a string round the stake, and the other round the outstanding shoot, leaving it seemingly at liberty, but preventing it getting any farther away, and thus avoiding making a bundle of shoots on the one hand, and a forest of sticks for supporting a plant on the other.

2. *Using the Common-sized Dahlias for Flower-beds.*—Exactly the same course may be adopted in the earlier stages as for borders, as early blooming depends upon early vigorous growth. Unless the beds are of great

size, however, the ultimate treatment must be different, as the beauty of a flower-bed greatly consists in most of it being much below the eye. Standard bushes it may have of good height, as resting or contrasting points; but the great bulk should be easily looked down upon. Another requisite is, that the flowers should be on stiff foot-stalks, so that the flowers look boldly up at you, instead of hanging their heads as if they were ashamed of themselves. Flowers thus hanging their heads on tall plants in a border are not so much amiss, because, if not somewhat giant-like in your proportions yourself, you have a chance to look up at them. Such meek, dependent flowers should, if possible, be excluded from a flower-bed. Your own observation, and the experience of nurserymen to whom you apply for suitable kinds, will make all right in this respect. The next point is how to get these naturally tallish kinds so low as from eighteen to thirty-six inches in height. This is best done by laying them down. I used to do this as soon as the first flower-buds appeared, as that stopped terminal growth, and caused a number of strong side-shoots to come, soon to be crowned also with flower-buds. Mr. Fraser, of Luton Park, allows the plants to grow even stronger than that; and then, catching the stem firmly near the base, he gives it a twist close to the ground, making it crack freely longitudinally, without breaking it at all transversely, and then it becomes quite plastic in his hands, as he can lay or turn the head in whatever direction he pleases. If the plant receives a check, which I suppose it does, it assists free blooming at the expense of free growing. The finest dwarf white bed of Dahlias I ever saw was thus formed. The kind operated upon was Bragg's *Antagonist*. I do not know how the beds were laid at the Crystal Palace; they were well supplied with buds, but had hardly any flowers on the 11th of September. Possibly they were meant to be attractive when other things were going off, as some sorts, when made to bloom freely from the end of July and through August, do not do so well at the end of September and in October.

3. *Dwarf Dahlias.*—Few, comparatively, of these have yet been tried; but in places of any extent groups of them, as I have proved this season, make a fine feature of themselves. All kinds that grow from eighteen to thirty inches in height, and are likely to produce a mass of brilliant colour independently of the quality of the individual flower (though, if that is good, so much the better), are likely to be much in request. I made some inquiries last year respecting some dwarf ones in the list of the Messrs. Clarke, who advertise in these pages; but I presume my letter miscarried, as I received no answer. I have heard of some nurserymen who have something very unique in this way, and, if sent out true to description, they will be found valuable. I have had numerous inquiries respecting the "*Unequalled Dahlia, Crystal Palace Scarlet*," the finest bedding-plant "in cultivation;" and many have had an opportunity of judging for themselves as to its quality. It is very unpleasant to be asked such questions, and I would not answer the present were it not for a strong conviction that the license for the poetical and the extremely romantic in plant advertisements has more than reached its legitimate extent, and which, if persisted in, will, in all likelihood, be cured by a mode somewhat analagous to that which gave such a lesson to the boy who got into the habit of calling *wolf* in sport. I say nothing of the most respectable firm who have sent out this scarlet, and have no doubt they believe all they have said about it. I say nothing of the *finest* bedding-plant *now* to be seen in the last days of September, because what I believe to be the same thing has been gay with me since the beginning of August. I suppose it will be deemed quite correct to *fresh name* an old plant if the possessor deemed it to be a novelty, though that does not really

make an old plant a new one, and might lead to some pleasant hotch-potch in our nomenclature. Scarlet *Zelinda* or Scarlet *Globe* Dahlias have been grown in some gardens much farther back than the Purple *Zelinda*, without ever dreaming that the grandeur of the Crystal Palace was to lend them an additional charm. It must, at least, be four years ago since I saw beds of it at Woburn, and it was anything but new then. Now, under either its old or its new name, I rather like it for its upright, graceful habit, and great profusion of buds and small flowers; certainly, neither more nor less on account of its getting a grand new name; but, if it is to be *unequalled*, I rather think it must stand alone in its glory, and at a safe distance from far more handsome and beautiful varieties.

The group here consisted of thirteen beds. The centre was *Silver Florin*. I expected it to have grown a little higher; but its highest point on this 13th of October, and after eight days' rain, is just twenty-five inches, and well supplied with bloom, as it has been from the beginning of August. The flower resembles *Antagonist* a good deal, but a little smaller. The great fault in it as a bedding-plant is, that it *nods* its flowers from the weakness, so that, unless you turn them up, you see the back or the side of the flower instead of its face. I had nothing else to choose without layering. There is one like it at Sydenham with the same drawback. There are two beds of *Mrs. Labouchere*, a buff, tinted with white and red, now thirty-two inches high, and have been a blaze of bloom since the first week in August. The colour is not so distinct; but the beds are more massy and showy than Scarlet *Zelinda*, and the individual flowers better. Crossed with these are the two beds of Scarlet *Zelinda* or *Globe*, and these two have been full of bloom since the middle of August. Height now, twenty-nine inches; colour, good; flowers, individually small and poor, and massing of colour greatly prevented by the great number of buds, which take off its brilliancy, and its spiral, upright mode of growth. There are two beds of *Gainé's Dwarf*, twenty-three inches in height; a neat little purple crimson, which, from its free growth, requires a great amount of disleafing. Two beds of *Prince Arthur* have been very fine; a good, large, crimson flower,—what a florist would term *unequalled* among its neighbours here. It throws its flowers at first rather thin; but they being individually so large, and supported high above the foliage with strong stalks, the Scarlet *Globe* and most others cut anything but an *unequalled* appearance in its presence. Height this day, twenty-four inches. There are, also, two beds of *Miss Wayland*, a fair-formed flower, with a bronze orange ground, tipped with white, and a little red at times. This is a great favourite with every one. There are abundance of flowers, though the wet has rather tarnished them. Height, twenty-five inches. The plants being small, from being struck as late as possible, did not bloom in a massive manner until the beginning of September, though there were plenty of fine blooms, but thin, before then. The two end beds, in horse-shoe shape, were Purple *Zelinda*. They are now sixteen inches in height, smothered with buds; but scarce of bloom, as, when this blooms very early, it is apt to come in successions. My plants were large when put out, bloomed at the end of July freely, and were a dense mass of purple in August and September. There is no comparison between this Purple and the Scarlet, in general, for bedding, as to producing effect. The latter is upright and spindling in its growth; the former is stiff and flat, so that the flowers stand densely almost upon a level. The individual flower, though larger, is, perhaps, worse formed than the Scarlet; but we have no other, that I have seen, that produces such masses of colour at an early period. The Scarlet *Globe* or *Crystal Palace* will be extremely useful for its colour before a better

comes. Even now, leaving colour out of calculation, it may stand side by side with *Gainé's Dwarf*, or, perhaps, *Mrs. Labouchere*. With *Prince Arthur*, another of *Gainé's*, I believe, and the others, it has no chance of competition. Where a scarlet bed, however, is wanted, and you do not like laying the large kinds down, you must give it a place. On the principle that we pay little attention to the quality of the flowers, I question if any large-growing kind could be made so interesting in a bed as this neat little thing, whatever name you choose to give it.

These beds had each a narrow border round them. Of the two end ones, or Purple *Zelindas*, one had *Cineraria maritima*, and the other the *Variegated Mint* or *Balm*. In August and the greater part of September the last was rather the best. There was hardly a bit of green to be seen; the deep purple occupied the whole of the top, and the white variegated leaves of the Mint concealed the foliage and stems of the Dahlias on the sides. A heavy rain and wind at last broke the outline of the edging. Before that I thought it was something like a putting "Luxury to bed." The outline of the fine-cut, white, hoary leaves of the *Cineraria* was more artistic, but it did not rise high enough to shoulder-in to the flowers of the *Dahlia*.

All those I had plenty of were treated much the same as I have mentioned for the first division: all were grown to one stem. Another year I should be inclined to take two stems from *Prince Arthur*, or plant thicker. Purple *Zelinda*, &c., were turned out into a turf-pit with a hard bottom, and were protected with calico, just as I mentioned, some time ago, the gardener of Courteen Hall protected his bedding-plants. I heard from Mr. Fraser, of Wilderness Park, the other day, and he tells me his Purple *Zelinda* has been very fine, and he thinks the plants bloom best from cuttings. The sort is easily propagated either by division or cuttings. I like division quite as well for early blooming; for late blooming in September and October I should prefer cuttings. To keep early-flowering plants continuous the flowers must be thinned a little, and plenty of water and rich mulchings applied in hot, dry weather.

At the risk of being deemed egotistical, I have made these gossiping remarks chiefly for ascertaining what has been done in the same direction, especially with dwarfs. A good yellow is wanted greatly, and a white with a stiff stalk to the flower. Of course, fine flowers would be best, but for bedding masses of colour are the thing. A Scarlet as good as *Prince Arthur* among Crimsons would be a grand affair, provided it was such a compact little bush. Before we get plants of such a one I mean to patronise this little *Crystal Palace*, whatever its history, and whatever its true name. I want to hear of kinds that want no laying or pegging down. If still more explicit practical directions are wanted respecting those I have named, I shall be glad to give them as far as I am able.

R. FISH.

THE GOOSEBERRY.

"A SUBSCRIBER" having inquired how to cultivate this useful fruit, and also requested a list of the best kinds, I thought it would be better to answer his queries by a short essay, rather than to give the answer in the usual way. I shall divide it into, 1st, Soil and Situation; 2nd, Planting; 3rd, Winter Management; 4th, Summer ditto; 5th, Propagation; 6th, Insects and Diseases; and 7th, List of Kinds.

1. *Soil and Situation*.—Our correspondent's soil, from his description, appears to be very suitable for this fruit. The fact is, any good soil on a dry bottom and well-manured will suit the Gooseberry. The situation should

be an open one well exposed to the sun. If planted under the drip of trees the fruit will be small, the trees weak, and altogether unsatisfactory. If the situation is low, with a damp or wet subsoil, the trees should be planted on raised ridges, with a quantity of broken brick-ends or stones under each plant, taking care, however, to have at least a foot of soil for the roots to extend and draw nourishment from. On high grounds the soil should be fully eighteen inches deep, and the draining may be dispensed with; in such a situation shelter from high winds is indispensable. I once saw a garden exposed to the winds from the sea. I happened to call just after a hurricane, and found many of the Gooseberry-bushes blown off close to the soil, and carried to the further side of the garden, and those that were left had many of their branches broken down.

This plant thrives best in fresh loam made of decayed turf mixed with well-rotted dung; but in old gardens, where, from the old age of the plants, it may be necessary to renew the bushes, I have found a couple of wheel barrows of soil from the compost-heap to each plant a good substitute for the loam.

2. *Planting*.—The best season for this operation is the autumn. It is a well-known fact that deciduous trees planted in autumn almost immediately push forth new roots, and thus accumulate a larger stock of sap to push forth shoots than such as are planted later in the season. The Lancashire growers generally plant their fine large sorts in rows five feet apart every way; but, for general purposes in good ground, I would recommend six feet apart. Some, for convenience, plant them on borders round the garden, which is a good plan enough; yet I think a square compartment is the best, because then no other crops can be grown to rob the trees of their nourishment; and all the operations of pruning, top-dressing, and gathering the fruit can be performed at the proper seasons, without interfering with, or injuring any other plants or crops.

3. *Winter Management*.—This includes pruning, digging, and mulching. *Pruning*.—The best season for this is as soon as the leaves are all fallen from the trees, extending from November to February. It should always be finished before the buds begin to swell, else there would be a waste of sap and strength. Cut out the cross-shoots and coarse, strong shoots of the preceding summer. Thin them regularly all over the tree, cut each shoot close to the old stem, so that no incipient buds are left to produce useless strong shoots the next season. Prune long, straggling branches back to a well-placed side-shoot. As the plants become old some branches will be found unproductive: such should be cut clean out, taking care to leave a young, healthy shoot to fill up the space. Young trees should have all the strong shoots cut in to two-thirds of their length, to cause a good supply of shoots to form a neat, compact bush; but care must be taken that the centre of each should be left open, to admit the rays of the sun to ripen the fruit and wood.

Afterwards severe pruning should always be avoided. A garden that I once entered into the management of had a compartment of Gooseberry-bushes in it that had been for several years severely pruned; so much so, that every bush was a complete mass of young wood, which was so crowded, that what little fruit was produced was useless. Thinking the matter over, I came to the determination not to prune them at all for one season. The consequence was, that very little young wood was made the following summer, and a great crop of fruit; and, besides that, a great number of fruit-spurs, short and stubby, were formed. The autumn following I went over them regularly, thinning the branches, but still avoiding cutting back any young shoots at all. The upshot of this management in pruning was—healthy trees well stocked with bearing-wood, which for five years, the time I remained there, produced as great crops and as fine

fruit as I ever saw. Let this example be a warning to all growers of this fruit to be cautious in cutting back young shoots. Those who grow Gooseberries for size only adopt a different method of pruning. They never aim at quantity, and, as the largest fruit is produced on young shoots, they never reserve what I call spurs. I have observed, this last summer, several of the gardens of these growers. Their bushes are low, trained out from the main stem quite flat, and kept so either by short sticks and hooks, or by a hoop fastened to short stakes, and the branches tied regularly round to the hoop.

The Gooseberry is sometimes pruned so as to form a standard, with a clear stem three or four feet high. I saw some fine examples of this mode in the gardens at Trentham and Chatsworth. For early-ripened fruit plant a few trees against a south wall, training them in upright shoots six or eight to a tree. The spur-method of pruning should be adopted for trees so trained. When the pruning is finished the cut-off shoots should be all cleared away to the rubbish-yard to be burnt, and then a good coating of dung should be spread over the ground, and carefully forked in, so as not to disturb the roots. Digging with a spade is very bad husbandry, for the spade is sure to bruise, cut, and destroy many of the roots. The plantation may then be left through the winter. Referring again to the growers for weight and size only, they adopt the following method:—They first mix a quantity of turfy loam with dung, then open a trench all round each tree a foot deep, then wheeling away the old soil, and replacing it with the new. Into this fresh earth the roots run, and, consequently, draw up a large amount of nutriment to support and swell out the large fruit the succeeding season.

To bring even ordinary crops to the highest point of excellence in size, colour, and flavour, it will be of great advantage, just after the winter frosts are over, to give a mulching of short, littery dung, covering the ground under each bush as far as the roots may be supposed to extend. This should be allowed to remain all through the summer. It keeps the soil moist and cool, and the roots in full action. Trees so cared for will produce much finer fruit than those managed in the ordinary way.

T. APPLEBY.

(To be continued.)

GENERAL NOTES FOR NOVEMBER.

THE operations in the kitchen-garden will be limited to a few things in comparison with the multiplicity of business that had to be done in the preceding months; nevertheless, there is an urgent necessity now, with the fear of a sharp frost looming in the murky distance, and disturbing us every night that the stars twinkle brightly in the sky, to house and protect our fruits, flowers, and vegetables; for, when the first sharp frost finds us asleep, our regrets that we had not been better prepared will be unavailing. Therefore, the sooner the *Cauliflowers* showing heads are carefully taken up with balls of earth the better, packing them closely together in beds, with some clean straw at hand to cover and save them from the frost. If the *Carrots* and other roots were not stored as recommended last month, we would again forewarn all whom it may concern of the great danger of postponing it any longer. A sowing of *Sangster's No. 1 Peas* and *Mazagan Beans* may be made about the middle of the month on slightly raised ridges, the rows to be made on the side of the ridge that is most sheltered. The fruit-tree borders are generally selected for these crops, which are more productive of injury to the fruit-trees than either the attacks of insects or unfavourable weather. The deep digging necessary for them will cut up the top and best roots, and the Peas and Beans will deprive the trees of the rains that fall in the early part of the summer, while there is a genial warmth and moisture in the atmosphere, than which no two things could be more favourable for the

development of mildew. *Shallots* planted now on raised rows or beds, with some soot or charcoal mixed with the soil, will be more certain to escape the attacks of the maggot than if planted in any other way, or at any other time. The late crops of *Celery* to be earthed up high, making the ridges narrow at the top, and the sides beat smooth with the back of a spade, to prevent the rains from entering and rotting the hearts of the plants, and the soil from being saturated with wet. When *fruit-tree pruning* may be, will depend, in a great measure, upon the preceding summer and autumn; for, after a hot, dry, and favourable season, such as we have lately had, when the wood is well-ripened, pruning should be performed in this month, which will assist to give a greater degree of maturity to the fruit-buds than if it is postponed to the spring. But if the summer had been wet, late, and unfavourable for the ripening of the wood, and, consequently, more susceptible of injury from frosts, it would be better to defer the pruning to the spring, when any unripe wood injured by the frost could be removed. Particular care to be taken that it is performed before the rising of the sap; for, if delayed until the buds have swelled, a great many will be rubbed off by the operation. When pruning and training young fruit-trees, a good foundation should be laid by nailing in a plentiful supply of young wood; for, if they be few and far between when young, they become very naked when old, and very difficult, more particularly with *Peach* and *Nectarine-trees*, to shape them into handsome trees. As the point-shoot is the first to push, it generally monopolises a great portion of the rising sap, which is expended in the elongation of a few more buds near to the points of the branches, and then the lower part of the branch is left naked. It frequently happens that young *Apricot-trees* grow too vigorously for the first two or three years after being planted, in which case it is advisable to lift them, and to cut off some of the most vigorous roots, and to replant them. *Root-pruning* may also be advantageously employed for the correction of any very luxuriantly-growing young fruit-trees; indeed, wherever it is practicable, the lifting of young fruit-trees now, and replanting them again, will well repay the trouble. The practice to be continued for four or five years, or even for a longer period, to train the roots near the surface in the way they should grow, which would retain them within the beneficial reach of atmospheric influences.

As we now cannot tell the night nor the hour when a severe frost may set in, it is advisable to take advantage of the present fine weather to cover the roots of any choice plants in the beds or borders intended to be protected for the winter with old tan, coal-ashes, or decayed leaves. Where dry fern is to be had, it is an excellent material for covering the stems of plants that require a slight protection in winter. Any choice sorts of *Hollyhocks*, *Heartsease*, or any other such herbaceous plants that cannot be trusted with safety to the uncertainties of the few following months (if there is not already a sufficient stock of young plants in pots), should be taken up, potted, and protected; they will be useful to supply cuttings in spring, and to make fine plants for flowering next season. For *Roses* the ground (a good, stiff, loamy soil is the best), requires to be dug two feet or deeper, and a quantity of half-rotted horse-dung mixed with the soil before planting. Every tree, shrub, or plant that is transplanted now, and in danger of being disturbed, and the roots displaced and injured by the winds, should be properly staked and fastened. *Dahlias* that have done blooming may be taken out of the ground, and, as many are still in their prime, by thrusting a spade into the ground around the roots ten days or a fortnight before they are taken up, will allow the sap to descend more gradually, when they become sounder for preserving, and to be thoroughly dried before placing them in their winter quarters.

To protect the plants in the greenhouse and frames from frost, give them but very little water until the ball is thoroughly dry, and when it cannot be withheld any longer with safety, give sufficient to moisten the whole of the soil, and as much air as possible in mild, dry weather. The first two or three nights' frost is generally severe, when plants are sometimes slightly caught by it; when such is the case they should be immediately sprinkled over the foliage with cold water, and carefully shaded from the sun the following day; then the shade may be withdrawn, and precautions taken to prevent a recurrence for the future.

Accidents will sometimes happen to the most careful; but winter is the season more particularly requiring our most persevering attention, when the neglect of a night, and sometimes of an hour, will destroy the labour of months. The climbing plants that adorned the greenhouse with their wreaths or festoons of flowers during the summer and autumn, when their shade was of advantage to *Fuchsias*, *Balsams*, and other such plants, should now be pruned in closely to admit all the light possible. The buds of *Chrysanthemums* to be thinned, and the plants supplied occasionally with liquid-manure. A gentle fire-heat, sometimes, applied during the day, will expel damp, and retain sufficient heat about the flues or hot-water pipes to keep out a few degrees of frost during the night. The destruction of the green fly by tobacco-smoke or by tobacco-water, wherever it appears, must be the order of the day; for they now very frequently cripple a collection of soft-wooded plants, in which the vegetative principle is reduced to as dormant a state as can be consistent with their safety, when they are most liable to suffer from their attacks.

As the preservation of *Turnips* is a subject of importance to many, we would advise to take two hurdles or sheep-pens, and to stick their feet in the ground at an angle of about 25°, one against the other; a little brushwood to be placed over each, to prevent any small Turnips from falling through the spaces between the bars, and then the Turnips, to the thickness of two feet, to be covered with stubble, dry fern, or any dry litter, and banked up with soil six inches thick. The great object is to guard against an excess of heat, which would cause fermentation in the whole mass. By leaving an opening in the ends of the hurdles a circulation of air is produced through the centre of the mass. Such banks may be extended to any length; but the shorter they are the better will be the circulation of air. Another great object is to preserve the saccharine properties of the Turnip untainted throughout the winter, and, if required, to a late period in the spring.—WILLIAM KEANE.

HOW TO STRIKE APPLE AND PEAR CUTTINGS.

In a recent number of THE COTTAGE GARDENER a correspondent, Mr. M'GOWAN, informs the readers of his intentions of entering on some experiments in trying to strike slips of Pears and Apples. I think I am able to save this gentleman unnecessary disappointment and loss of time, which so many before him have experienced, if he will be pleased to hear in what way nurserymen in my country (Germany) have perfectly succeeded.

First of all choose, if possible, a border with a north aspect early in spring, before the buds of the fruit-trees begin to swell; then draw a couple of drills not further than nine inches apart, and so many more for the following rows, and of the depth as if you thought of sowing Peas. When done, go to the fruit-trees, and cut any quantity of last year's shoots to the length of two feet, or, if not to be had, one foot long, the same as for grafts; and if you have taken care that the cut at the base is smooth, and in a slanting direction, press the thick end or bottom of the shoot into one of the furrows, bend it over the ridge, and stick the top into the opposite one. Be very particular to have a good, plump eye where the shoot bends highest, and let the ridge be on an equal level with the original ground, not higher.

The drills must now be filled up with additional soil, both sides of the cutting gently pressed firm, leaving the middle untouched, and give the bed a sort of finish by levelling the whole, so that you see nothing but just the central bud peeping out. If there is a prospect of dry weather it would be well to retain the moisture of the soil by a slight covering of fern, hay, or similar material. Within a very short time you will see the buds swell, and, as if by the agency of hothouse temperature, the whole will appear to be on the move, and you will soon observe leaves and little twigs make their appearance. Frequently but one eye breaks, viz., the topmost; but this is not the general rule, for very often the two buds next to the centre, and even as many as six, will strike root and push up shoots, so that at the end of the season one can part them

into as many as have roots, and transplant them to their intended quarters; but you will be amply repaid for a year's patience by a vast increase of fibres and nice little stems.

If any of the bent-in shoots force themselves out by elasticity they can easily be pressed in again, and, as a last recommendation, I would urge not to lay the cuttings aside until you think you have time to put them in, but let the soil receive them directly, so that they are in full vitality and health when put in.

Like many other great inventions, it was mere accident that gave the clue to this simple and yet so practical affair, though the inventor frankly confesses that he thinks he might have easily found it out by reflection, with the aid of physiology.

The credit is due to my friend Dochnahl, the celebrated pomologist in Bavaria, who declined the sums offered him by the Belgian nurserymen to sell his secret to them; but, heedless of that, he would have it out, and, though a nurseryman himself, published his invention for the benefit of all in his "*Pomona*," a very cleverly edited little paper.

I feel proud to bring such a man to the notice of English readers; for his disinterestedness and enthusiasm for the noble science of pomology, to which he devotes every nerve of his life, ought to be spread world wide.

Diel, one of the stars of the century, tried, and could not strike a single Apple cutting, and rooted but half of a number of slips of the Pear Quince, which, at the present day, many more besides him can strike readily. Dochnahl, however, succeeded in some of his first experiments in rooting 800 slips of the French *Douçin*, and missed but ten out of the whole lot. (The *Douçin* is the *Pomme de St. Jean* of the French, and the *Französische Johannisapfel* of the Germans.)

The reason why so many failed hitherto in their attempts is because they could not hit upon the right plan of preventing the cutting from withering at the junction of soil and atmosphere.

The cutting had the desire to grow, but, while the air absorbed the elaborated matter stored up during autumn in the tip of the branch, the absence of callus and roots failed to support the too heavy demands on the vital fluid of the cutting. Hence the drying up of that part of the cutting exposed to sun and air.

Mr. D. says, he is indebted for the invention to some rods of the Hazel-nut, which he bent into the ground for the purpose of forming a kind of boundary for a flower-bed; the tips of these kept green, formed leaves, and showed even a little callus.

This was the latch-key to the new cutting-house, and I shall with pleasure give you more details of his various experiments if you think them worthy of a place in these columns.—TH. VON SPRECKELSEN.

ANNALS OF THE POTATO DISEASE.

On reading "T. M. W.'s" remarks, in your first number of the present volume, on the Potato disease, and as I seem to fall in with some of his opinions, I thought I would just jot down a few remarks I had made during the progress of the disease. To improve my hand in writing I began making daily entries of work going on, and other matters that interested me, just before the appearance of the disease; therefore I thought I would look over them, and see what remarks were made respecting the disease, as, perhaps, many of your readers that have registered the fall of rain for the period of the disease may be able to state more minutely its effect in producing or accelerating it.

I find in 1845 our people did not observe any disease at digging-up time, and there was an excellent crop; but, on the pit being opened three weeks after to examine them, there were full one-half of them diseased. They were taken out, and spread on a boarded floor; the diseased parts dried up, and the disease made no farther progress.

In 1846, on the 14th of July, we found the Ash-leaved Kidneys affected. This year, too, they went off after being dug up, particularly those that were not put in the dry.

In 1847, first symptoms of disease on July 17th, and, at the same time, the atmosphere was filled with a black insect that destroyed the parts of vegetables and flowers, &c., that they pitched upon.

In 1848, July 10th. The spots on the Potatoes are increasing fast.

1849, August 5th, and a wet time.

1850, July 18th. A drain ran through the garden, and was partially stopped up, and for the distance that was affected by it the Potatoes were entirely rotted at the above date, while the other parts of the garden were fresh and green; but a good deal of rain fell afterwards, and the crop was very bad.

1851, August 7th. The Potatoes are getting very much affected in the tops, though no disease in the tubers as yet. Storms, with easterly wind afterwards, and they went off badly.

1852, July 21st. The Potatoes are going off very fast. On the 10th of June, after three wet days, fell the heaviest thunder-storm, and made the greatest flood for the time ever known to any one in the neighbourhood. A good part of June was wet, and the early part of July; also on the 5th there was a heavy hail-storm, with hail-stones as large as horse-beans. The crop was very bad, and the largest Potatoes were most diseased.

1853, July 22nd. Symptoms of the Potato disease are to be seen in every garden. Now, this year May and June were pretty dry months. We planted a good many of a Kidney called Early Frame, a very good sort for a crop, but rather close. They came in about a fortnight earlier than the Ash-leaved, and we sold them at a good price; and our neighbours, finding them to be a good sort, begged of us to let them ripen for seed, and they would give the same price for them; and we, thinking it to be to our advantage, did not sell any more, and in about three weeks after, when we dug them up, there was not one-third of them sound. We saw no disease while digging for use, and up to that time it was pretty dry; but afterwards the month was chiefly stormy. The ground was shallow and stiff, and we had but little more than the seed.

1854. The whole of the crop was dug up in August, and very little disease in the tubers; still the tops died off as usual. July and August tolerably dry.

1855, July 15th. The disease is progressing rapidly in the tops, and I have found two diseased tubers (Ash-leaved Kidneys). Rain fell here on sixteen days in July, and on thirteen days during August. A good many are diseased; also, in the shady parts of the garden, they are affected with the canker.

1856. Potatoes more than an average crop, and no disease worth naming, with the exception of a few that were planted late, and had not done growing when the rain fell in August. Now, there is not an average crop in this neighbourhood. It is only in well-cultivated gardens that the crop is good. In the fields the crop has, in several instances, been given up for the rent; yet there is no disease. Rain, more or less, fell during the month of July on fourteen days, and in August on sixteen days, though not in large quantity; but, to account for the Potatoes not being diseased as last year, the temperature was much higher during July and the greater part of August. The first four days of the last-named month were respectively 80°, 86°, 82°, 80°, at twelve o'clock in the shade.

In the year 1852 I rented some Potato ground on my own account, as I could attend to them during the evenings, and there were various opinions respecting using cut and whole seed. I planted some of both, and the advantage was about a peck to a perch in favour of the whole sets. I have tried a bed of Flukes this year, and find them much about the same. Now, generally, the whole seed will throw up a great quantity of shoots; but I thin them out in flat hoeing, and leave only about three of the strongest. But who would cut large Potatoes to plant, when, as a general rule, of late years, there are more of a good and proper size for planting than are needed to plant the same ground, yet are not large enough for culinary purposes?—THE DOCTOR'S BOY.

PLANTING TREES NEAR HOUSES.

You will greatly oblige me by the indulgence of a short space in your valuable journal for a few remarks on the very injudicious mode of planting trees in the immediate vicinity of good houses. In my professional pursuits I very

frequently observe great mistakes in the arrangement of what ought to be permanent ornamental trees in the vicinity of the mansion. In order, therefore, to prevent a recurrence of these by indiscriminate planters, I will make a few remarks, and mention some existing specimens by way of illustration.

It is not at all uncommon in old places to find magnificent trees so situated, that, instead of being objects of beauty and interest, they are just the reverse—objects of regret. For example, at Bierly Hall, Yorkshire, where I was making alterations some twenty years ago, I found a splendid Cedar of Lebanon, the trunk of which measured upwards of four feet in diameter, growing so close to the front door of the edifice as to lash the windows with its branches. This, though exceedingly troublesome, I have no doubt still remains a mark of censure upon the hand that planted it. Had this tree been judiciously placed some thirty yards from the building, instead of being offensively troublesome it would have been highly interesting, and an admiration to every one.

At Weston Hall, also (a fine old place in Yorkshire), there is a handsome, thriving tree of the same kind, standing as near the house as the one above-mentioned, and surrounded by the carriage drive at the entrance-front. Every visit I made to this place this unfortunate tree was the subject of considerable discussion, and, although its spreading limbs greatly obstructed the light, and interfered with the view from the windows, yet its great beauty induced me to take the lady's part, who pleaded hard in its favour against the wish of the owner.

Only the other day, at Gisburne Park, the seat of Lord Ribblesdale, I ordered some fine Larches to be cut down, which were much too near the edifice; but here some finer trees of the same kind fortunately stood at a proper distance. They were the finest I ever saw—upwards of three feet in diameter. At this place were also two Cedars of Lebanon, one standing thirty feet from the house, and the other only twenty-four feet from the dining-room windows. The latter, not being a large tree, I advised his Lordship to have transplanted.

Again, at Park-hill House, near London, my proceedings were interrupted by a fine, thriving Cedar growing close to the terrace, with its branches stretching nearly to the windows; yet it was too handsome a tree to be destroyed. And I well remember, many years ago, seeing on the estate of Lord Middleton, Wollerton Park, two gigantic evergreen Oaks (*Quercus ilex*), the stems of which were upwards of four feet in diameter, standing close to the angle of the edifice; but I must here confess that up to this time I had classed it amongst low-growing trees, and it is still planted by many gardeners as a large shrub; and, strange to say, even at this day, many lawn trees are planted without any regard to the size to which they afterwards attain.

Not long ago, at Sibton Park, in Suffolk, I had to remove some nice specimens of *Araucaria imbricata*, *Cedrus deodara*, and other large-growing Conifers, because they were placed on the lawn too near the residence.

I might enumerate many other examples of this bad system of planting in places where we ought to expect better things; but enough, I think, has been said to suggest to landscape gardeners, as well as gardeners and planters generally, the desirableness of considering, before planting, the habit and growth of plants, as well as the height to which they attain, in order to avoid the glaring mistakes I have here enumerated.

In conclusion, it must always be borne in mind that, although some of the rarer and more recently introduced plants may be pretty little things in pots when first received, they will in future years become gigantic trees, and, therefore, ought to be planted accordingly, and then future generations will not have to deplore their removal as a nuisance when arrived at their greatest beauty.

The following are a few fashionable lawn plants which attain to a very great size, and, on that account, ought never to be planted nearer the house than sixty feet; but I would rather say twice that distance:—

Abies Morinda, *Pinus Douglasii*, *P. insignis*, *P. excelsa*, *P. Lambertiana*, *Picea nobilis*, *Taxodium distichum*, *T. sempervirens*, *Araucaria imbricata*, *Cedar of Lebanon*, *Cedrus deodara*, *Cryptomeria Japonica*, *Cupressus Lambertiana*, *Wellingtonia gigantea*, &c.—JOSHUA MAJOR, *Knosthorpe, near Leeds*.

PLUNGING THE POTS OF ORCHARD-HOUSE TREES.

MR. ERRINGTON, whose opinion is always of consequence, in page 4 of *THE COTTAGE GARDENER*, recommends potted trees always to be plunged. For *Plums* and *Cherries* out of doors in a preparatory state this is not amiss, but for *Peaches* and *Nectarines* grown in pots under glass, which they always should be, I say, speaking from no small experience, *do not plunge*. The roots of the trees seem to me to enjoy the warm temperature of the house, and to become ripe, if I may use the expression, like the shoots, so that the tree, both root and branch, is in a healthy, mature state. When the pots are plunged the trees make most vigorous shoots, which are often not sufficiently ripened. I have not plunged a Peach-tree in a pot these last six or seven years, and I fully believe that I shall not again, and for this reason—my trees unplunged give fine crops, and are now in the finest possible state of health.

Mr. Ferguson says, in the same number, "Peach-trees in pots ought to be shifted annually," and, "It is a bad system to allow the roots of bearing trees to grow through the pots." I say to the first, decidedly *do not*; to the latter, as decidedly *do*. Shifting trees in large pots is troublesome and laborious. In spring I take out the soil from the side of the pot (so as not to injure the roots from the crown of the tree), to one-third or often one-half the depth of the pot, and replace it with unctuous loam and rotten manure equal quantities, ramming the compost down firmly. I do not allow my trees to root into the border too early in the season, but tilt up the pots, and break off the young roots till the fruit commences swelling; I then suffer them to root into the border till the fruit is gathered. I have not given any liquid-manure these four or five years, and find there is no occasion for it, owing, I think, to the loam I use being rich and tenacious. My success is quite perfect; and so, in spite of the doctors recommending their specifics, I am more than ever inclined to "leave well alone."—THOS. RIVERS.

NAMING FLORISTS' FLOWERS.

WITH regard to giving new names to flowers, I recollect hearing, as a child, of a gardener who, on finding a pretty flower growing by the road-side, took it home, cultivated it, and sold it as a novelty, by the name of *Rhodum sidum aureum*.

Now, we should not have been surprised if some "H. C. K." of that date had raised an objection to this name, and hazarded a conjecture that the name must be *Rhodium sidus aureum*, "the Golden Star of Rhodes," or something similar; nor that he should have been answered by the learned nomenclator, "O no! I named it myself, and its meaning is a yellow flower by the road-side."

So says Mr. Beaton in reference to *Diadematum* (atum or atum, qu. which is it?) *regium*—its meaning is *Royal Diadem*.

Is there, then, in the Latin language, such a word as *Diadematum*, 1, 2. dec. n, "a diadem?" which there must be if the words will bear Mr. B.'s meaning. Let him, therefore, only quote the author who uses the word, chapter and verse, and the matter is settled. I will at once confess my ignorance, and thank him for telling me something I did not know before.

The only substantive I know of is *Diadema-tis*, a Latinized Greek word, meaning the white band that was bound round the head of kings in early times. "*Diadema quirini*" occurs in Juvenal. Of this word, *Diadematum* would be the genitive plural, and, with the adjective *regium*, would, according to school rules, neither construe nor parse.

I believe the name intended is *Geranium diadematum regium*, "the royal crowned or diademed Geranium." I have not by me books to which I could refer for the word *diadematus*, a, um, as an adjective or participle; but I believe it does exist, and shall be glad to know where.

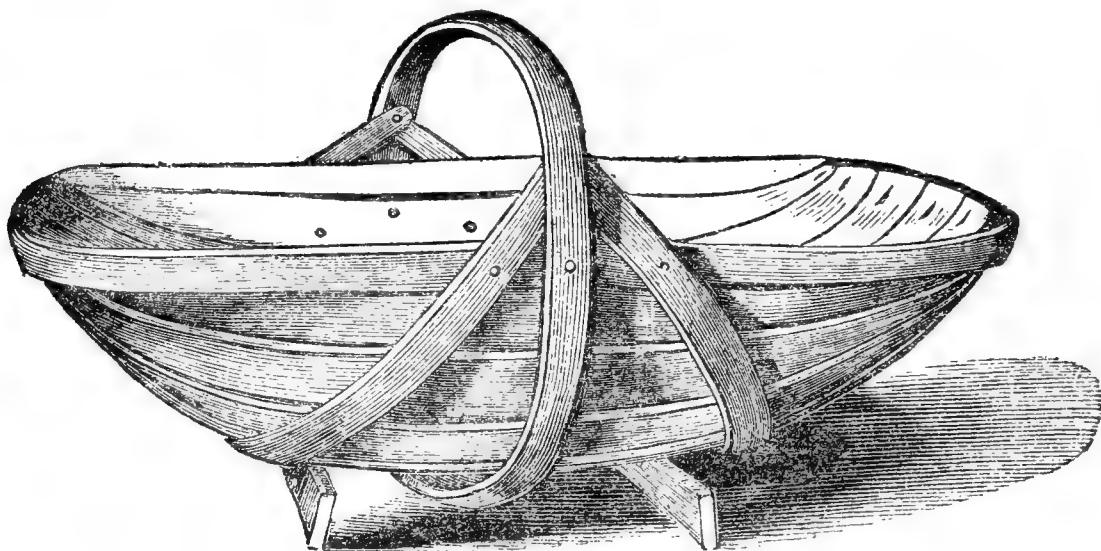
I think it would have been as well if it had been called "Royal Diadem" at once in the "vulgar tongue;" and there ought to be some regularly constituted authority to whom new names, when given, should be referred.—SYLVESTER.

IMPLEMENTS CONNECTED WITH GARDENING EXHIBITED AT THE ROYAL AGRICULTURAL SOCIETY'S SHOW.

ONE of the definitions to the question, "What is man?" may be, "He is a tool-making animal;" and it is a good distinction, for although the bee, the beaver, and other creatures erect edifices, yet they only employ their natural organs in performing their work; and neither they nor any other animal but man invent tools to facilitate their labour. Man began this invention at a very early period, for Tubal Cain was a worker of metals, and the workmanship must have been carried on by tools, and for the making of tools. Their improvement, the invention of better aids to manual labour, has occupied man's attention ever since; yet the progress of such improvement was very slow until the commencement of the present century, and if we compare the spade of the last century with the spade of the Romans, as recently discovered in Shropshire, we shall see that, except

in material, it had but little improved, but was still a clumsy implement.

In the early days of gardening, Rakes, Garden Reels, Knives, &c., were unknown, and having recently made some research into this branch of archæology, we were the more struck by the contrast afforded at Chelmsford, in July last, by the implements that were there congregated. A representation and description of these, we think, will facilitate their further improvement, and render more known what gardeners may now have to aid their labours; therefore we are ready to place before our readers such woodcuts of tools as may be furnished to us by their makers, with the notes we may have to offer upon the tools they represent. Messrs. Gidney and Son, of East Dereham, in Norfolk, have furnished us with the following:—

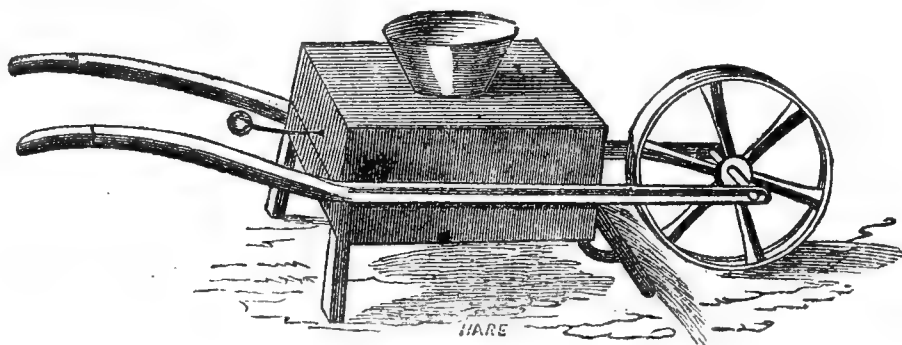


SUSSEX TRUCK BASKETS.—These, made of laths of Birch or Lime, are the neatest and most durable constructions we know of.

- | | |
|--------------------------|---|
| No. 1.—10½ in. by 5½ in. | } Suitable for Ladies' Work and Key Baskets, Flower Seeds, Children's Toys, &c. |
| No. 2.—13 in. by 6½ in. | |
| No. 3.—14 in. by 7½ in. | } Servants' House Baskets, gathering Flowers, &c. |
| No. 4.—16 in. by 8½ in. | |

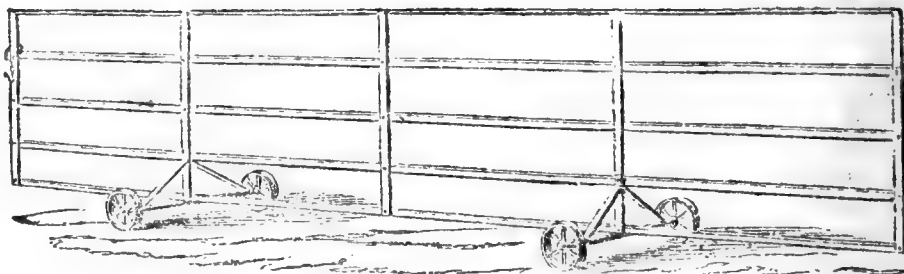
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| No. 5.—18 in. by 10 in. | } Especially adapted for Garden Vegetables, Fruits, and every Horticultural purpose. |
| No. 6.—21 in. by 12 in. | |
| No. 7.—24 in. by 13 in. | } Stables, Feeding Stock, &c., and for all Agricultural and other purposes. |
| No. 8.—27 in. by 14 in. | |

Some are made of a better description of cleaner wood, and others of very choice wood, with silver-headed nails, like those made by command of Her Majesty.



IMPROVED HOUSEMAID'S BARROW.—For the purpose of receiving slops from the bedrooms, &c., for distribution in the garden, or wherever required. Messrs. Gidney have certainly supplied a want here. It is made of strong galvanized iron, with funnel at the top, and the distribution can be regulated by the man driving the barrow. We hail everything that promotes the use of liquid-manure, for the time is coming when all soluble fertilizers will be applied in this form.

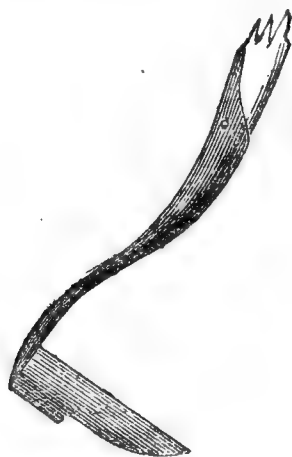
NORFOLK SHEEP-FOLD HURDLE.—This is one of the best and most easily moved hurdles we have ever seen, and we notice it here because these qualities, added to their neatness, render them peculiarly fitted for confining sheep, goats, or a cow upon grass in a garden, where, occasionally, these animals may be wished to pasture.



IMPROVED PRUSSIAN HOE.—This is an exceedingly useful hand-tool both for the flower and kitchen-garden. It will do twice the work with half the labour of any description of hoe now in use; and it not only cuts and destroys the weeds,



SINGLE-EDGED.

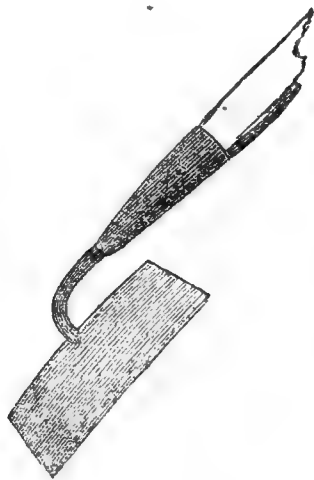


DOUBLE-EDGED.

but leaves the ground perfectly level without the use of the rake. They are only applicable to beds and borders, where the ground is soft. For ground that is hard the next hoe is preferable, because a greater downward pressure can be given.



HORIZONTAL HOE.



NORFOLK HOE.

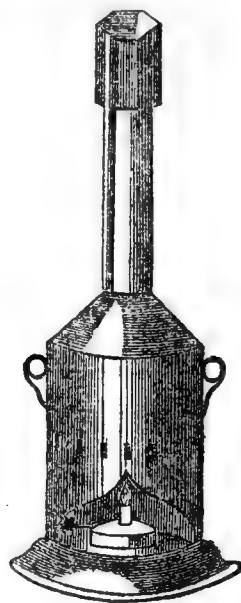
IMPROVED HORIZONTAL HOE.—The blade is set at the same angle, and thus cuts up the weeds without destroying the evenness of the ground so much as those hoes do which are set nearer to a right angle with the handle.

NORFOLK HOE.—The Hoe is fastened to the handle by a strong ferrule, so made that it is impossible for it to become loose. The mould does not adhere to the neck in wet weather, which is the case with the old pattern Eyed Hoe.



IMPROVED DRILL HOE.—“This,” Messrs. Gidney say, “draws a drill of any required depth, angular at the bottom (a great desideratum), thereby insuring a perfectly straight line of plants.” We fear, however, that this will not do what is promised. The gardener must walk backward, treading on the ground on which the drill is to be drawn. This renders it impossible to draw the drill of equal depth, on account of the footsteps.

With a common hoe, walking sideways, a gardener would make a drill quicker and better.



SELF-ACTING FUMIGATOR.—A Portable Instrument for Fumigating Greenhouses, Conservatories, &c.—By the use of this article the unpleasantness of contact with the smoke is removed, a circumstance which must recommend it to the notice of every lady or gentleman having a conservatory, as it merely requires lighting and it performs the operation, delivering the smoke in a dense body without further attention, a result which no other Fumigator attains without constant blowing. We can bear testimony to its efficiency, for it delivers the smoke in volumes so rapidly as to fill the house in a very short space of time, and thus renders less tobacco efficient.



FRENCH BEAN CUTTER.—For the purpose of Cutting French Beans and Scarlet Runners previous to Cooking. — However large and uneven the Beans may be, by using this Cutter the pieces will be all of a uniform size, thereby not only improving the appearance when brought to table, but securing perfect equality in the boiling, and a considerable saving of time in the preparing. We noticed this on a former occasion, but repeat our notice for the purpose of saying that we know where it continues to be employed, and that cooks more and more applaud it.

IMPROVED CAST-IRON COCK.—For Garden and Manure Tanks, Water Butts, &c.—Fig A. shows a view of the cock

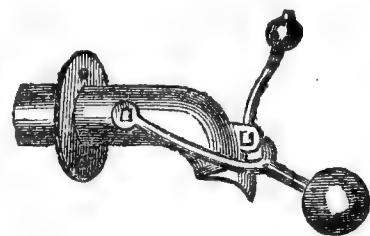


Fig. A. Closed.

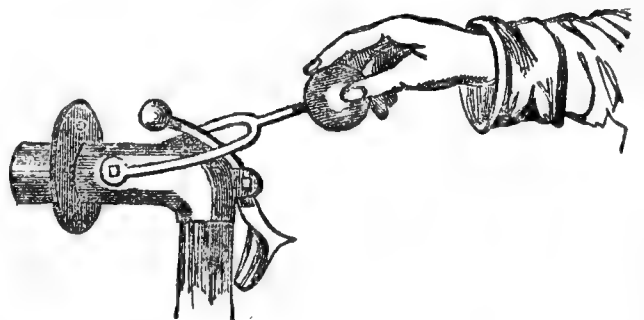


Fig. B. Open.

when closed. To open it, lift up the lever as represented by Fig. B., which, on being dropped down, effectually prevents leakage. It is simple in construction, not likely to get out of order, and is made in different sizes. No. 1 suitable for Water Butts, Tanks, &c. No. 2 ditto for Manure and Water Carts, &c.

NEW AND RARE PLANTS.

ARGYREIA HIRSUTA (*Hairy Argyreia*).

One of the most beautiful of the tropical *Bindweeds*. It belongs to that Natural Order (*Convolvulaceæ*), and to *Pentandria Monogynia* of Linnæus. It is by some called *Argyreia Choisyana*, and by others *Rivea hirsuta*. We believe it to be a native of Burmah. Flowers purplish-pink.—*Botanical Magazine*, t. 4940.

LYSIMACHIA NUTANS (*Drooping-flowered Lysimachia*).

This is the *L. atropurpurea* of some botanists, and the *Lubinia atropurpurea* of others. A native of South Africa. Flowers crimson, appearing in July; bearing out-of-door culture in summer, but the roots requiring shelter in winter. The young flowers droop, but soon become erect.—*Ibid*, t. 4941.

CODONOPSIS ROTUNDIFOLIA (*Round-leaved Codonopsis*).

A native of the Himalaya Mountains. In Dr. Royle's specimens the leaves must have been of a different shape from those on the plants at Kew, or he would not have called it *rotundifolia*. At Kew they are spear-head and heart-shaped. The flowers are yellowish-green, and not at all striking. The plant is a twiner.—*Ibid*, t. 4942.

OROBUS FISCHERI (*Dr. Fischer's Bitter Vetch*).

It is probably a native of South Italy and Northern Africa. It is hardy. Flowers reddish-purple.—*Ibid*, t. 4943.

DENDROBIUM FALCONERI (*Dr. Falconer's Dendrobium*).

An Orchid from the Bootan Mountains, at an elevation of 4,000 feet. Flowers white, tipped with purple.—*Ibid*, t. 4944.

MUCUNA PRURITA (*Stinging Mucuna*).

This is the East Indian Cow-itch or Cowage plant, the hairs from the pods of which are so intensely irritating. The flowers are blackish-purple, and, hanging in bunches, resemble black Grapes. It is common in India, especially near Madras.—*Ibid*, t. 4945.

QUERIES AND ANSWERS.

THE CRYSTAL PALACE DAHLIA.—PLANTS FOR A NARROW BORDER.

"I am much disappointed at seeing, in THE COTTAGE GARDENER for October 14th, that the *Crystal Palace Dahlia* is not nearly so good a bedding-plant as the *Zelinda* variety. I had imagined, from all I heard and read about it, that it was the finest bedding-plant in cultivation. I have a few spring-struck plants of it in pots, as well as some cuttings just rooted. Will you be good enough to tell me the best method of preserving them through the winter? I have not seen either variety, but my anxiety to get a bed of *Dahlia Crystal Palace* is somewhat damped, and I fear now it will disappoint me.

"I have a long, narrow border, with gravel on one side and grass on the other; it is forty yards long, and only one yard wide. I am anxious to vary the style of planting. I had Verbenas and Scarlet Geraniums in it alternately for some years, and this season a row of *Tom Thumb* Geraniums next the grass; then a row of *Alyssum variegated*; next to it *Lobelia ramosoides*; and, by the gravel path, *Enothera prostrata*. The blue failed late in the season; but, notwithstanding, it was admired very much by some. Will you suggest a few new modes of planting it? I have a great variety of plants, and can accomplish almost anything you may suggest. My stock of the *Golden Chain* Geranium is rather small, and it would be as well not to arrange for them to be planted in it.

"Will you assist me in patterns for making rustic baskets for ornamenting a lawn? I am rather afraid of placing something of this kind on the grass, lest Mr. Beaton, if he saw it, might designate it a "hideous mongrel," like the ornamental flower-pots in the gardens at St. John's Wood and all round the suburbs of London.—PUMPKIN."

[Keep the young, struck Dahlia plants just like Verbenas

or Petunias all the winter; and, in the spring, make cuttings of the tops as of Verbenas. The *Crystal Palace Dahlia* must be pegged down to make a good bed; it is not a dwarf kind at all. For the narrow border next season plant the first row next the gravel with *Verbena, Géant des Batailles*; the centre row with *Flower of the Day*; and the back row with *Tom Thumb*; or, second, *Baron Hugel, Flower of the Day*, and *Commander-in-Chief* or *Harkaway*; *Calceolaria, Hugo*; and *Geranium, Tom Thumb*. If rustic baskets were made on any plan which is recognised by artists there would be no objections to them.]

FORCING VINES AND PEACHES IN POTS.

"I have two small houses (fifteen feet by nine feet each), heated by hot water, in which I wish to force Vines and Peaches in pots; and I want you to tell me how best to do this. My thought is to have Peaches in both houses, say from January to July, and then to follow the Peaches with Vines. I have a regular Vinery, in which I could bring on the Vines in pots up to a certain point; but what I want is to make my houses as useful as possible in the production of Grapes and Peaches in pots, and pray tell me how to do so. I see no reason why Vines in pots should not produce really good and fine Grapes every year without any change of plants, provided the Vines are grown in 13-inch pots, and are repotted every year. I was told the other day, by a very clever gardener, that this might be done; and from what one often hears respecting the small quantity of soil which a Vine requires, supposing the soil to be of the right sort, there seems to be nothing against it. But why, then, is it the common practice with pot Vines to have new plants every year?—Hugo."

[We shall be glad to assist you, but rather think, in the mean time, you know as much of the matter as we do. Gardeners differing is more a matter of appearance than reality. The great variety of circumstances that come under their notice cause them to vary the working of one principle to suit these circumstances. Hence you will find the same result arrived at by different means, provided you do not mingle the means, and take a leaf out of one practitioner's practice on one subject, and a leaf quite different out of another practical's mode, and thus create opposition instead of agreement. We can get to London in much the same time by different routes; but we should be a long time getting there if we went a bit by one road, and then took a cross-country cut to go a little way by another road, and then another. Just so with gardening; there is no particular royal road to success. We see as great results achieved by one mode as one seemingly different, just because the subject is thoroughly comprehended by both practitioners. Practice is based upon a clearly seen principle of action; and the operators, instead of bending a principle to suit circumstances and a certain outline of routine management, make the circumstances bend to the principle. Now for a few words as to your inquiries.

You will have seen much on pot-culture in previous numbers, and will be able to judge for yourself as to the pleasure to be derived from it, rather than the economy it will secure. We will, therefore, say nothing upon that head. We presume you have got Peach-trees in thirteen-inch pots, or propose getting them, or are ordering maiden dwarfs to be grown for that purpose. One great means of success is the power of keeping the roots, when you commence to force, a few degrees warmer than the top. This is best secured by plunging the pots partly in any substance which will yield a gentle heat, or which is heated artificially by a pipe, &c., passing below the plunging medium. In starting you must begin with a low temperature, as for a Peach-house; but this, we presume, you know all about. If you commence with pots eight inches wide or so, a shift may be given the following year; but when they are in thirteen to fifteen-inch pots we should decline doing much in the shifting way. We would first secure good drainage and free, fibry soil. This will decay and get closer every year. No roots should be allowed to grow through the pots. As much of the surface-soil should be picked out every autumn as possible without injuring the roots, and fresh soil and rich mulchings and manure-waterings will keep such plants in good bearing for many years, provided the wood is strong,

short-jointed, and well-ripened and rested after fruiting. For resting, the pots should be plunged behind a north wall, and kept dryish after October.

The success in growing Vines in the same houses after July will greatly depend upon letting them come almost naturally in the Vinery, and making sure that they have plenty of air and light there. Do not suppose that you will please yourself if the Vines from which you expect so much are to be shaded until July. Treated in this manner the Vines may be said to have little forcing. Vines in pots, more so than Peaches or Figs, delight in having a higher average heat at the roots than at the branches. If you forced your Vines much in the Vinery, and there were good open spaces, you might fruit your Vines in pots there, and ripen them too, or bring them out with care when nearly ripe, or, at all events, to have the wood ripened thoroughly for another year.

There is no doubt that even without often repotting, merely depending on securing good drainage and rich nourishment by top-dressings, you may fruit Vines in pots year after year, but only if you are satisfied to take a few good bunches from each pot. As generally practised, there is no great economy in growing Vines in pots one year, and fruiting them the next; but so long as it is the custom to take a number of bunches from such a young plant, so long must the practice of this constant succession of growing and fruiting be adhered to. The whole strength of the Vine is thrown into the fruit, and treat it how you will, it has been so exhausted that it will do little good next year. Begin with Vines in pots as you would do with a Vine on a rafter; take only a very few bunches at first, and never a great many at any time, and your pot will perfect its fruit-buds and fruit every year. Gardeners know all this perfectly, but most of them think that when they have the means they get more weight of grapes, and the pots present a better appearance, when fruited only one year. Where there is not great convenience for raising and growing strong young Vines, the taking moderate crops and continuing the Vines on from year to year would be the most economical. On the question of economy alone, we doubt whether our correspondent would not have more Grapes, and nearly as many Peaches, by forcing his Vinery rather early, planting out Vines, and taking them up the roofs of these two houses some six feet or so apart; starting them in February and March, and having pots of Peaches, &c., below, keeping the temperature under 60° at night until the Peaches had set. A few Vines in pots might come from the Vinery as the Peaches were removed. However, we wish every success to our correspondent, and if he gives more details of his means, how his heating is done, &c., and wishes for definite information upon any point, we shall be happy to give it. Not long ago the culture of Vines in pots from eyes was given, inserting the buds one spring and fruiting them the next, involving considerable care and attention. Were we to grow the same Vines in pots year after year we would hardly shift any, but depend on top-dressings and mulchings.]

ROOM PLANTS.—EFFECT OF GAS LIGHTING.— HYDRANGEA LEAVES CURLING.

"I have formerly grown a great many plants in my windows; but having removed lately to a house where I have not much sun, and as I should be very sorry to be deprived of my plants, I want to know what kinds of plants would do best for me, and where I could procure them of the best quality. I have got a plant of the Hydrangea; the leaves have all curled this summer, and it has not flowered this year. I want to know what will prevent the leaves from curling, and get it into flower, and also whether gas will injure plants?—A CONSTANT SUBSCRIBER."

[Gas is just as destructive to vegetable as to animal life, perhaps more so. We often conjecture what could have led to the desertion of splendid cities of antiquity. Let but the whole soil of a modern city be saturated with gas and animal excrement, and a few centuries may render our gorgeous palaces uninhabitable. We have seen *Hydrangeas* curl when they were too dry, and also when clogged with wet from insufficient drainage. To get it to

flower well next year it must have all the sun possible this autumn, and be kept rather dry all the winter; then almost every bud will bring a flowering-shoot. We think we could advise you better as to your plants if you told us what plants you formerly grew best, and what is the aspect of your present windows. Geraniums, Fuchsias, Myrtles, &c., would answer as well as anything. A friend of ours has most of her windows to the north, or nearly so; but she has one to the south, and one to the east, and another to the west, and in these she grows her plants until they come into bloom, and then removes them to the north, where they stand longer in flower. She also keeps there a few pots of the hardier Mosses and Ferns, so as to have green foliage to look at. You had better give us more particulars.]

VINES FOR A SMALL HOUSE.

"Will you be so kind as to inform me the best four Vines to plant in a small house, sixteen feet six inches long, against the south end of a house, rafter fifteen feet, so as to have one early and one late; and whether it would answer to plant four more, to run up the back wall or wires the same as under the glass? Also, the best way of preparing the beds to plant the Vines in; bottom, stiff clay; depth and width to be taken out. I can fill up with the top spit of good old meadow soil; and whether it would be advisable to add any manure?—A SUBSCRIBER."

[You have not told us whether you mean to force your house much or not. Presuming the latter, we would recommend one Dutch Sweetwater, one Stockwood Golden Hamburgh, one Black Hamburgh, one Barbarossa. The *Sweetwater* is very early and good, but requires heat, and artificial dusting with its own or other pollen, to make it set well. If you are afraid of that, use *Royal Muscadine* instead. We believe the *Golden Hamburgh* will be early, but want more proofs. It is very superior to the *Muscadine*; and, if you choose to dispense with it, you could have two *Hamburghs*. It will be advisable to plant at least an equal number against the back wall. In such a soil as you speak of we would take out very little, but have your made border chiefly above the surface, and a layer of concrete above the clay. You will do well to have the border as wide as the length of your rafter, and though the half of that would do with surface dressings; and if it was any object to you, not to make it all at once. We would commence with a width of three or four feet, and a depth of twenty to twenty-four inches, and use a little leaf-mould near the roots, and a few bushels of bones, broken small, mixed with the soil along with some lime-rubbish and charcoal, and broken pieces of brick. We would recommend planting the back wall in a similar manner. Supposing that the fruit-plants go up the rafters, the back ones should be placed in the centre of the lights, so as to get most light. Were you to force much we would recommend one *Golden Hamburgh*, one *Black Hamburgh*, one *Muscat*, and one *Barbarossa*. There has been much written on this subject lately.]

CULTURE OF VAN HOUTTE'S SPIRÆA.—CUT- TINGS OF LUCULIA GRATISSIMA.

"*Spiræa flore pleno alba*, Van Houtte's *Spiræa*. I have two good plants in eight-inch pots, which have made this summer fine shoots from one to two feet long. My expectation is that these shoots will flower. I wish to know if the shoots should be shortened in the spring before the time of flowering. In the woodcut given by Van Houtte some years back, in the *Gardeners' Chronicle*, of this *Spiræa*, the shoots were shown growing erect. The shoots of my plants are weeping like a Willow. Can my plants be the true *Spiræa* of Van Houtte? Will the *Spiræa* live out as a shrub?"

"A fine old plant of that elegant sweet-scented plant, *Luculia gratissima*, has been in a greenhouse in this neighbourhood for a few years. I have been given cuttings several times, and could never strike one, nor could the gardener who has the care of it. May I beg the favour of a hint to propagate it?—M. F."

[We are not quite positive, but still we believe you have got the right *Spiræa*. The shoots, when very strong, grow upright at first, and then bend over when long. It is best

not to shorten them. We have a double White, which blooms freely against a wall, and also in warm places out of doors. It comes early in a greenhouse. When done flowering it should be pruned back a little, to get a number more of fresh shoots. However, we are not quite sure if ours and yours are similar.

You will find an article or two on the *Luculia* in these pages. It is not quite so easily managed as a *Hydrangea*, though your neighbour, Mr. Barnes, would find no difficulty with it. It is easiest managed when planted out in a conservatory, as there it can have plenty of summer-heat and light, and the roots are not subject to sudden changes. It strikes most freely from small side-shoots, two or three inches long, slipped off close to the older stem in March or April; dressed there with a clean knife, the lower leaves removed, the small ones at the top left, inserted then in a well-drained pot in silver sand, moistened, covered with a bell-glass, and plunged in a heat of about 60°, to be increased 10° in a fortnight, and air given at night to prevent damping, and hardening off by degrees.]

BOILER AND PIPING FOR A SMALL HOUSE.

"Will you kindly inform me how much four-inch pipe and how large a boiler it would require to give a bottom-heat of 200° or 212° to a place seventeen feet long, seventeen feet wide, and three feet deep?—IGNORAMUS."

[A small boiler, and some eighty feet of pipe, with the water kept boiling in this, might do. But what can you want such bottom-heat for? From 80° to 90° would be quite sufficient for anything in the vegetable way.]

PROPAGATING MANETTI STOCKS FOR ROSES.— EARTHING UP POTATOES.

"How are Manetti Stocks for budding Roses propagated? Should Potatoes be earthed up?—A. C."

[This is a good time to make cuttings of the Manetti Rose for stocks; but the true answer to your inquiry is this—they are propagated on the "Natural System" nine times out of ten, the worst system for getting Rose stocks. By the Natural System a Rose-cutting for a stock is allowed to grow after Nature, like most other Rose cuttings, that is, with all the bark and buds on. The cuttings are six inches long, and four inches of the length are under ground, and two above. The top bud, or the next to it, makes a shoot to bud on; and some bud on the old part of the first cutting. Either way the Natural System takes its course; all the buds down to the roots will begin to grow sooner or later, and unless they are pulled off they will starve the budded shoots. If they are pulled off it is just as bad; wounds, warts, and wrinkles occur. Hence the cry against them; but adopt the Artificial System, and leave only two buds at the top, and you will have a clean stock free from suckers.

If you will try alternate rows of *Potatoes*, earthing up every second row, and leaving the others unearthed, you will find the rows unearthed up yield as many, if not more, *Potatoes* than those which were earthed up; and they will ripen from a week to ten days earlier. The latter result is very important when we reflect that the earliest ripening are the safest from disease; and if earthing up does not increase the produce, why throw away the labour expended in doing it?]

GLADIOLI FOR BORDERS.

"Will you give a list of Gladioli suitable for open-ground culture, and one for pot-culture? I have tried *Ramosus*, *Herbertii*, &c., in the open ground, but they flower so late the bulbs do not ripen. Would they do if suffered to remain in the ground during winter?—A SUBSCRIBER FROM THE FIRST."

[*Ramosus*, if well managed, flowers as freely as *Natalensis*, and ripens the bulbs equally well. Where *Ramosus* does not do it is hopeless to try others, as it is one of the very easiest to flower and ripen. No *Gladiolus* is named *Herbertii*, but the crosses between *Blandus*, *Cardinalis*, and some others of the older kinds by Dr. Herbert, are sometimes called after him; but there were more than twenty kinds of

them. Beyond *Gandavensis*, *Floribundus*, *Colvillii*, *Formosissimus*, *Splendens*, and a few others, there is very little reliance to be put on all the lists which we have seen. The same bulb goes under many names. Ten men raise the same cross in one season, and give ten different names to the best of their seedlings, which, in a few years, turn out to be all one sort. A list of pot *Gladioli* would include eighty or ninety names without exhausting them; and if you were to send it to a nursery they would probably send back word that they did not know above six of them, but they could recommend you fifty or sixty other sorts. *Gladiolus* is a mass of utter confusion.]

PLANTING A TERRACE BORDER.

"I have just finished a terrace round two sides of my house. A wall three feet high, and 180 feet long, supports it; half of it has a south-east and half a south-west aspect. Before this wall I have formed a bed five feet wide, and I am anxious to plant it with some good things. Will you, therefore, be so good as to give me an idea what would be the best plants, &c., to fill it with? and I wish to plant against the three-feet wall some flowering-plants to nail on it; and I should be obliged by your giving me a list of what would look well on it. The situation is sheltered, and in the weald of Sussex."

[The planting of the low terrace wall and the border in front of it being entirely a matter of taste, we shall not undertake to plant it, as, if there is one thing more objectionable than another in flower-gardening, it is that of pushing individual taste on the public. In our private capacity we would not hesitate to plant both; but it is very different when thousands are concerned in the matter. There are two rules to be observed here. The best plants should be represented in these borders, and as five feet will not allow of a pattern design being made for beds, the planting must be in the mixed style. The second rule is one which is too often violated, and runs thus:—If a border in front of a terrace wall, be the wall high or be it low, unless there is an architectural edging between it and the grass or gravel there must be a plant edging of some sort. When a gravel walk or terrace comes in front of such a border an edging of Box is the most common and least expensive; but, unless the Box is three inches across the top, and as many above the gravel, it is not considered to be a suitable accompaniment to the architectural lines; therefore, one continuous row of some flowering-plant is planted just behind the Box, or a few inches from the grass. If the flowering-plant and the Box make one line all the better; but the flowering-shoots must not advance over the Box. In case of grass, the line or edge of the grass must not be encroached on by the flowers; but no matter how small the distance between the grass and the plant edge, so that the line is just seen the whole length. Artists are despotic about these simple rules, but one may plant the rest of the border and the low walls according to fancy. If your borders were in some hands a line of *Variiegated Alyssum* would be planted in front of the south border the whole length, and six inches from the edge, with the same distance plant from plant; and the south-west border would be edged with one of the little *Lobelias*. Some would plant the wall with *Tea-scented Roses*; some only with the dwarf *Pomponne Chrysanthemums*; others would plant a collection of hybrid perpetual *Geraniums*, as *Oakleaves*, *Diadems*, *Uniques*, of which long lists will be found in almost all our volumes; others would train *Verbenas* and *Petunias* against the walls, as is done at Drummond Castle; and some would not allow a leaf against them, only a row of *Belladonna Lilies* (*Amaryllis belladonna*); some would fill the borders with botanical varieties, and nothing else; some with such plants as are noted to be very difficult to flower or keep in winter; others, again, call that nonsensical, and would show the strength of their bedding by having one or more of each kind grown here as specimens; another would cry out next year, "See what a mess I have got here!" and it all comes of following THE COTTAGE GARDENER. We cannot by clairvoyance discover what is the ailment of your *Yew-hedge*. Your other inquiries shall be attended to.]

SOWING SEEDS OF CAMASSIA ESCULENTA AND BRAVOA GEMINIFLORA.

"The suggestion made in one of your numbers as to propagating the *Linum grandiflorum rubrum* by cuttings has been tried with success by the writer. Much thanks for the hint given.

"In a past number one of your correspondents spoke of sowing seeds of *Camassia esculenta*. The writer having failed, would be glad to know what is the best season of the year for sowing these seeds, and also those of *Bravo geminiflora*, and whether there is any other besides the above-named species of Bravo?—A KENTISH SUBSCRIBER."

[The seeds of *Camassia esculenta* should be treated in all respects as those of the gigantic Lily of India were in the Clapton Nursery, as described by Mr. Beaton the other day; that is to say, the seeds of this *Camassia*, like the seeds of all other hardy and half-hardy Lilyworts, should be sown at the end of September, and be kept as cool as is natural to the bulbs. The Quamash root of the North American Indians—our *Camassia*—is deeply buried under the snow all the winter, therefore is in a warmer place than a cold pit in England; but a cold pit is best for a seed-pot, and after that the seedlings to be treated in all respects like seedling border Tulips. The seeds of *Bravo geminiflora* require exactly the same treatment as the last; but the seedlings must be treated afterwards like common *Ixias*, for the little bulbs are of that hardiness. There are no more Bravos that we know of; but on the Continent they often say *Catocapnia* for Bravo, but the latter is the correct name. Are you aware that it is not a very showy plant, only good on a mixed border of botanicals out in front of a greenhouse or low wall, and to be well protected in winter? It agrees with the border treatment of *Ixias*, and comes into flower in June and July after the *Ixias* are over.]

PROPAGATING GERANIUMS BY THEIR LEAVES.

"I have been unusually interested in the very curious article by Mr. Beaton, on 'Propagating Geraniums by Leaves, Flower-stalks, and Cuttings,' in the number for September, page 396, of THE COTTAGE GARDENER. It is now, probably, too late in the year for any one not having a hot-water propagating-pit to try the experiment; but, with a view to the future, I would beg a little explanation of one portion, which is not quite so clear as could be wished. Mr. Beaton says, 'Every single leaf upon a *Tom Thumb* may be turned into a bedding-plant; but you must take the bud along with it, and preserve the blade of the leaf.' Now, where is this bud to be found upon the leaf? I can only imagine it to be at the end of the leaf-stalk next to the stem, and that the leaf-stalk, with its bud, is to be inserted in a cutting-pot. Am I correct in this?

"Again, he says, 'A Geranium leaf will root just as well without a bud as with one.' Does this mean that the leaf-stalk, without a bud, is to be inserted in the cutting-pot, or is the base of the leaf, without the stalk, to be inserted? I infer the former to be the case from the subsequent remark, 'The roots from these leaves come direct from the base or bottom of the leaf-stalk.' Perhaps you will say I have solved my own inquiry; but, in a matter so very curious and so novel, I would gladly see my way quite clearly, and therefore I ask for distinct information.

"As I read the matter I would, in trying the experiment, take a leaf with its leaf-stalk, either with a bud cut from the stem, or without such bud, always preserving and inserting the leaf-stalk. The remainder of the paper is worth its weight in gold.—VERAX."

[One universal law of the Vegetable Kingdom is, that every leaf which has netted veins has a bud at the bottom of the leaf-stalk, or very near it: some groups have the bud a little in advance of the stalk, and some have the buds out of sight. The Geranium tribe is one of this sort; you cannot see the buds till they are nearly ready for leafing. All the rest of the explanations asked for are answered by "VERAX" himself, who comprehends the whole subject most perfectly.]

IN WHAT CLASS SHOULD GARDEN LABOURERS EXHIBIT?

"In what class should a man of the following description compete at an Horticultural Exhibition? As a cottager, or not? He is a common labourer in a gentleman's garden, where there are many young gardeners kept; consequently, has nothing but just the roughest of the work to do.—D. WALTERS."

[We have repeatedly answered that all labourers in gardens must exhibit in the class for "Gentlemen's Gardeners," and not in the class for "Cottagers." It is quite true that such garden labourers are not gentlemen's gardeners, according to the correct definition of a gentleman's gardener; but they have more opportunities to learn gardening, and to obtain seeds and plants, than have artisans and farm labourers, for whom the "Cottagers' class" is intended. To avoid all such doubts, there should be a separate class for "Under-gardeners and Garden Labourers."]

DODECATHEON MEDIA SEEDLINGS.

"I was not so fortunate until this spring as to obtain seeds of this to vegetate, and was much pleased when the little seedlings made their appearance; but, to my great mortification, though I did everything that the most careful could think needful, I could not, after so long a time as three months, get them to produce any leaves beyond the two seed-leaves, and, after struggling so long, off they went. Can your intelligent departmental writers throw any light on this failure?—FLORIST."

[Those leaves were all their first year's growth, even if they were in their native woods. Had you preserved their little roots they would make a stronger growth next spring, and so on till they were of a size to bloom. The gigantic Lily of India made no more growth this first season from seeds at Clapton.]

TO CORRESPONDENTS.

ASPARAGUS AND SEA-KALE PLANTS, &c. (*Senex*).—Do not cut down the stems of the Asparagus until quite dead; then cover the plants with some rich manure; water them with liquid-manure and salt next spring and summer, and plant them into beds, to remain, in the March following. Your proposed treatment of the Sea-kale is right. Your Drumhead Cabbage was sown, perhaps, a little too late in the spring, or was a bad sort, or the soil was too light and poor. There are contrivances to prevent the drip in glazed houses, but the moisture in the air within them will condense on the glass during cold nights.

VINES IN ENGINE-HOUSE (*A Subscriber*).—You can grow Grapes in it if there is sufficient light, but to secure this the whole roof nearly ought to be glazed. The same requirement of light applies to flowering-plants.

MELON PIT (*A. B.*).—We know of no "District Act" requiring you to give notice of its erection to the District Surveyor. Is there a local Act, and, if so, what are its words? Why do you not ask the Surveyor himself?

CUCUMBER-HOUSE (*A Gardener*).—Did you merely place the soil on the platform, without shelves or sides, to make a box of it? In that case very likely the soil got too dry in the middle. Did you fix sides to the platform, and have no drainage? then, in that case, there might be stagnant moisture. In either case, though the foliage might not suffer much, the fruit would be apt to do so. We should also like nine inches to a foot deep of soil, even if the width were less. In such a place we have had plenty of fruit from pots a foot wide from March, and would go on as long as we liked to give them heat. If the platform is close to the front wall, have some openings, so that the air circulates all round. Cucumbers like bottom-heat from October to June. These notes may give a hint, but we are sadly at a loss to account for the mishaps and vagaries of Cucumbers of late.

VINERY AND PEACHERY (*T. K.*).—There are several typographical errors in the article alluded to by Mr. Fish, so that the meaning in some places is only perspicuous from the context, or, perhaps, you might have been saved the trouble of writing. We can only say that, as a whole, we approve highly of your plans, and have no doubt but that you will be satisfied with them. With a good boiler well set you would not lose a vast amount of heat; but, if fuel is valuable, you will find the flue a saving, and if we had it we would use it constantly, as, even when starting Vines, you can always have as little heat as you like, and even what little you may have may be without any waste. A flow and return four-inch pipe all round the house will do for early forcing; pipes along the front and ends would not be enough, unless there were more of them. A couple of pipes all round would do for the span-house, as there will not be much forcing. If you wish to remove the roof, you may use sashes as you say; but why remove the roof of such a house? If left, why not use strong sash-bars, fixed like Messrs. Rivers, Lane, &c.? From one to two feet will be high enough for the walls of your span-roof. Of course you will have your walk in the centre, and that roof may either be fixed

or in sashes as you propose. Of course you mean to train your Peaches and Vines about a foot from the glass on the east and west sides. There can be no question as to success. You would lately see some plans of similar houses sent by our friend Mr. Ferguson, and we have several times seen them in all their beauty hanging with delicious fruits.

CURING AND KEEPING BACON AND HAMS (J. S.).—We shall be obliged by some of our readers saying how the above can be best effected. The First Edition of THE COTTAGE GARDENERS' DICTIONARY is out of print. Nine Parts, price sevenpence each, of the Second Edition, are now published. It will cost 8s. 6d. when completed.

FOWLS' DUNG (A. S. W. B.).—It is very nearly as powerful as guano. Do not mix it with lime. Sow it over the surface of the soil among growing crops in spring, about five hundred weight per acre. It is worth £4 a ton.

REMOVING SHRUBS (A. E. O.).—Legally you cannot remove a single shrub after it is once planted. It matters not that they are "your own planting." When once planted they belong to the landlord. You must not even cut the tops off wantonly.

ADVERTISING (J. W.).—Thanks for your obliging note.

NAMES OF PLANTS (W. N.).—1. We take to be the *Cupressus Lusitanica* from the small bit sent. It is quite impossible to be quite certain about the species from indiscriminate bits of this tribe of plants. 2. Appears to be one of the Pokes; probably the *Phytolacca dodocandra*. 3. Is one of the winter Cherries, namely, *Physalis Peruviana*. (C. T. J.). —The leaves Nos. 1 and 2 are of the Loquat (*Eriobotrya Japonica*), and the tree requires greenhouse treatment, as for Acacias and Camellias. No. 3 is a leaf of *Francoa ramosa*, which requires the protection of a frame in winter. It is a frame herbaceous plant.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

BIRMINGHAM. December 2nd, 3rd, 4th, and 5th. Sec., J. Morgan, jun., Esq. Entries close November 1st.

ESSEX. At Colchester, 8th, 9th, and 10th of January, 1857. Secs., G. E. Attwood, and W. A. Warwick.

GLOUCESTERSHIRE. Nov. 26th and 27th. Sec., E. Trinder, Esq., Cirencester. Entries close Nov. 1st.

NOTTINGHAMSHIRE. At Southwell, December 17th and 18th, 1856. Sec., Richard Hawksley, jun. Entries close November 19th.

NOTTINGHAM CENTRAL POULTRY ASSOCIATION. January 13, 14, and 15. Hon. Sec. Frank Bottom. Secretary to the Canary Department, Jno. Hetherington, jun., Sneinton.

PRESTON AND NORTH LANCASHIRE. January 21st and 22nd, 1857. Sec., Ralph Leigh, Esq., 125, Church Street, Preston. Entries close December 13th.

N.B.—Secretaries will oblige us by sending early copies of their lists.

JUDGMENTS ON POULTRY.

(Continued from page 50.)

In a preceding paper on this subject some general conclusions were drawn from the experience of the last few years. Let us now turn to certain particulars in the individual classes.

In *Spanish* no long period has elapsed since the labours of the Judges were greatly abridged by the fact that some three or four pens, at the utmost, were free from the blemish of imperfect faces; and among these alone, consequently, was the contest. But exhibitors, in their anxiety to comply with this one requirement, have too often forgotten points of equal importance; and thus has it happened that weedy, under-sized birds, with this single recommendation, have been too commonly produced. This stricture, however, is no longer applicable at our best Exhibitions, where exclusion from competition cannot be now summarily pronounced, and at least an equal share of time and labour is required for decision as in any other department.

One principal recommendation of our Poultry Societies to public support being their declared object of ascertaining what breeds are likely to be kept with the greatest profit, the question may be most properly asked as to the position that *Spanish* would occupy in such an estimate. Now, as layers, they are, unquestionably, very good; but, at the same time, the much-despised Red-faced *Minorcas* are superior, in this respect, to the pure White-faced birds. No fowl, indeed, of any kind produces a greater weight of eggs in the course of the year than the former; while, in common with the last-named, although objection may certainly be taken to the dark colour of their legs for the table, their very compact shape well qualifies them for culinary operations. I have kept at different times, and more or less extensively, every variety of fowls, and this mainly with a view to test their comparative economy. So strongly, however, am I inclined to the *Minorca* (the term is here used as the

common designation of the Red-faced *Spanish*) that I hope never again to be without some of these birds; and this, too, is the conclusion at which many of my friends have likewise arrived. They are pre-eminently a hardy race, and though it is but just to add that my own is a very favourable climate, still the White-faced *Spanish* are now extensively located throughout our island; and, consequently, wherever they thrive the *Minorca* would be equally at home.

A few pens of White *Spanish* continue to appear; but surely, where the contrast of colour is so marked a characteristic excellence of the race, and no counter-balancing property can be alleged in their favour, they must continue to occupy the insignificant position hitherto so rightly assigned to them.

No fowl has gained more by Poultry Shows than the *Dorking*; in fact, in this instance, it may be reasonably asserted that improvement can scarcely go further, and this not with respect to a few select pens only, but to the class generally. Judges, indeed, have no sinecure when this portion of their work begins; and, probably, nowhere are they ever called upon for more careful consideration than when they find themselves in front of a good *Dorking* chicken class. Hence loud clamours are often raised where the awards have not followed the order predetermined by sanguine exhibitors. On one side is heard the complaint, "The *Dorking* must be judged by weight, and mine I know to be the heaviest." Another expresses his disapprobation: "Look at the figure, the plumage, the manifest high-breeding of my birds, and then say whether the prize should not have been given here." Reasoning seldom does much when a person is bent on looking at one side of the question only. However satisfied, therefore, in our own minds at the justice of the decision, the dissentients would still adhere to their opinion, whatever might be urged to the contrary. The first would in vain be told, "True,—weight is an essential point in the *Dorking*, but it must be co-existent with other points also; and even supposing your pen matches in colour, is it not possible that this feather may not be what it should be, not as regards the mere colour, but its condition as indicating the health and constitutional vigour of the birds?" A wide scope, indeed, must always be allowed to *Dorking* colour; and, provided the occupants of a pen match each other, and their condition be good, it must be an extreme case where the verdict is against them on this score only. But, however heavy the pen, and whatever their colour, a loose, fluffy state of feather will ever most properly tell against them; and, besides this, mere weight is too frequently accompanied by a gaunt, ill-formed figure, wholly repugnant to the proper *Dorking* features.

But this, be it remembered, does not advance the claim of the second objector. His birds are perfect, we will suppose, no less in figure than in feather and condition; but still they are deficient in weight. The Judge balances their *pros* and *cons*, and a decided falling off in the latter particular cannot be compensated by excellence elsewhere. The dissentients, however, will rarely admit the general estimate of merits and drawbacks on which the decision must be grounded. But a word more on this subject when the *Hamburg* class is before us.

These notes are certainly somewhat desultory, so that allusion may now be allowed to other matters, not, perhaps, strictly in connection with the heading of this paper.

To submit fowls of any sort to a perfectly fair competition before their Judges, all of the same class should be on a perfect equality as regards position and light. We should not find one row above, another below, compelling us to be on tip-toe to inspect the one, or to drag the others from their obscurity. It would be difficult, no doubt, to manage this, but till it be accomplished there will remain an unquestionable advantage in the pens that are well in the light, and on a good level with the eye.

So some of the ocellated *Turkeys* of *Honduras* have been brought over, and the old scheme of their domestication among us has been again revived. But, apart from the natural habits of the bird, it strikes me that a formidable obstacle will be found in our climate and temperature, which, when we speak of "domestication," is all important. They may, undoubtedly, be kept alive, and even their young may be reared, as happens with the giraffe and other similar importations; but this is far, very far, from holding out ex-

pectations of success such as are necessarily connected with the term "domestication," which implies a very different state of existence.—W.

THE BLACK SPANISH FOWLS.

I HAVE two hens and a cock, Black Spanish (from prize birds), that were hatched May 26th, 1855. One of the hens began to lay the 9th of January, 1856; the other on the 26th of the same month. The first hen lays eggs $2\frac{3}{4}$ oz. each, some a very little under, but all above $2\frac{1}{2}$ oz. The number of eggs laid per month by this hen are as follows:—

January	16	Eggs.
February	21	"
March	22	"
April	21	"
May	22	"
June	22	"
July	23	"
August	23	"
September	15	"
		<hr/> 185 Eggs. <hr/>

This wonderful hen still continues to lay $2\frac{3}{4}$ oz. eggs. She has not missed laying two days in succession since she began last January. Her sister, which began to lay on the 26th of January, continued to lay (her eggs were a little smaller than the above) until the 28th of August, when she began to moult. I may remark, that neither of these remarkable hens has at any time shown a disposition to sit for a single day.

My stock of fowls consists of different kinds, but the Black Spanish are decidedly my favourites, their eggs being large, of good shape, and a beautiful clear white colour.—G. U. T., *Middlesex*.

COCHIN-CHINA CHICKENS OF THE PRESENT AND FORMER YEARS.

TURNING over some old note-books of 1854 and 1855, with a view to compare the weights of my present Cochin chickens with those of past years, I was so struck with the disparity which I found, that I determined to send the register to you, in the hope that it may interest some of the readers of the *POULTRY CHRONICLE*.

I must preface my statement by saying that the chickens were, in all three cases, of exactly the same age (twenty-two weeks); were Cochins of the Lemon Buff variety; were of the same strain, and were weighed each year in the second week of October. All were bred by myself, weighed by myself, and the dates of hatching and the list of weights carefully noted by myself at the time, to avoid the possibility of mistake.

In each case there were more than three birds of a sex weighed, but I have chosen the three heaviest birds of a year to compare together.

	1854.		1855.		1856.
	lbs. oz.		lbs. oz.		lbs. oz.
Cockerel	5 12	.....	7 8	.....	8 14
Ditto.....	6 0	.....	7 19	.....	8 5
Ditto.....	5 8	.....	7 12	.....	8 8
Total of 3 birds	17 4		22 14		25 9
Average of cockerels	5 12	.....	7 10	.....	8 9
Pullets, No. 1	4 11	.....	6 6	.....	7 3
Ditto, No. 2.....	4 4	.....	6 1	.....	6 12
Ditto, No. 3.....	4 3	.....	5 12	.....	6 8
Total of 3 birds ..	13 2		18 3		20 7
Average of pullets	4 6		6 1		6 13

In no one instance had the cockerels commenced crowing, or the pullets laying.

In all three years the birds have had the same attendant; a person of exceeding cleanliness, punctuality, and care. In 1854 the fowls were mainly fed on boiled rice and barley-meal; in 1855 and 1856 on a cheaper diet, consisting of

barley-meal, coarse pollard, and boiled potatoes (diseased ones), in equal proportions.

I did not, however, propose to call attention to the management of my poultry; another motive urges me to write.

I do not think there is any greater source of heart-burning and discontent at Poultry Shows than the vexed question of the age of chickens. A very fine pen is exhibited, and the age stated. "Impossible!" cries one competitor. "A mistake, of course," says the second; and the chorus swells, until "cheating" and "swindling" are the mildest terms employed.

Had any one in 1854 put before me chickens weighing about half as much again as my own did then, which I knew had enjoyed every advantage of run, food, and attendance, and told me that his birds and mine were of exactly the same age, I must confess I should have been strongly tempted in my heart to set down my opponent as an impostor. Yet my experience of 1856 would have proved that he might be speaking the literal truth. In our little world, as in the greater one of Art and Science, the impossibilities of yesterday are the common-places of to-day.

If I can only persuade one exhibitor to look with a little more generosity and candour on his neighbour's statements in the coming Shows I shall not have employed this last half hour, or trespassed on your patience, in vain.

As I do not wish to be suspected of making these observations by way either of defence or of advertisement, I subscribe myself with the impenetrable signature—O. O.

BUFF-COLOURED GESE.

At the Sowerby Bridge Poultry Show some of these were exhibited by a gentleman who gave the name of "Mr. John Rawson, of Brockwell;" but, although letters have been written to that direction, they have been returned with "no such person" endorsed upon them. Among others who wrote was the Rev. W. Mousley, of Ashby Rectory, near Welford, in Northamptonshire, and we endeavoured to find for him the direction of the owners of the Geese. In this we have failed, but some of the information we elicited deserves publication. Mr. Hewitt, says, "I know several parties who have now kept Buff-coloured Geese for two or three years. I have not any doubt, upon inquiry, they might easily be obtained, as they breed twice annually, are perfectly hardy to rear, and mostly raise considerable numbers in each brood.

"A strange peculiarity was proved by the party who first introduced them into Denbighshire. They will breed freely with any of our common varieties of Geese, and the offspring are large, unwieldy, awkward-looking birds, of a dirty dun colour if the cross is with the Embden Goose; if with the Toulouse, they are then the 'saddle-backed,' grizzly-grey and white, however, being the colour of the patches. The flavour of these cross breeds is somewhat indifferent, and nature, as though insulted by the intermixture, gives a hybrid for the trouble bestowed. On the contrary, the crosses of any other descriptions of Geese with which I am myself acquainted are as prolific as any truly bred ones.

"The hybrids are continually fighting, very troublesome, and never lay."

This reply led to the following from the Rev. Mr. Mousley:—

"I take the present opportunity of saying that, in my opinion, it would be better at the Poultry Exhibitions, especially at the more important ones, to have the classes for Geese to correspond with those generally adopted for Ducks, and, perhaps, to give an additional class in each case where weight and excellence for the table are alone considered; these would generally be found among the cross breeds. The classes would then stand thus:—

- | | |
|---|---|
| 1. White Aylesbury Ducks. | 1. White Embden Geese. |
| 2. Rouen Ducks. | 2. Toulouse Geese. |
| 3. Ducks of any other distinct variety, as East Indian, Call, &c. | 3. Geese of any other distinct variety, as the Canada, Buff, &c. |
| 4. Cross-bred or any kind whatever when weight alone is considered. | 4. Cross-bred, mottled, or any other kind whatever when weight alone is considered. |

"By this management persons would be encouraged not only to keep the different breeds of Ducks and Geese pure, but also to endeavour, by crossing the pure breeds, to obtain the best for food, which, of course, is the great object.

"Having kept Geese for some time, permit me to remark, that I have found the Toulouse breed a very valuable one; last year my poultry-man raised fifty-seven young from two old Geese.—W. M."

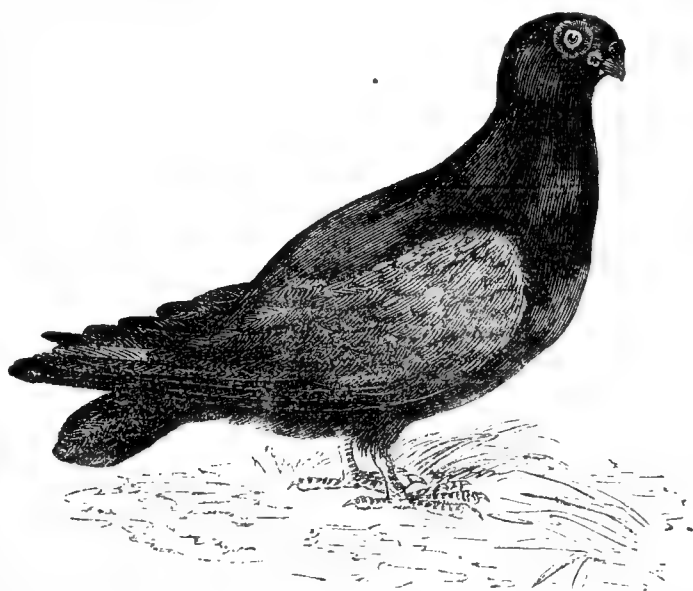
WARTED PIGEONS.

(Continued from page 51.)

CLASS 1, VARIETY 3.—THE BARB, OR BARBARY PIGEON (*Columba vulgo Indica dicta*.)

French.
PIGEON POLONAIS.

German.
INDIANISCHE TAUBE.



THE Barb, according to Mr. John Moore (1735), derives its name from being originally brought from Barbary, and I have read that they are to be found wild in that country, but for the truth of which assertion I cannot vouch. W. A. Osbaldiston, Esq. (1792), calls it also the Polish Pigeon, which is its French title; while the Germans call it the Indian Pigeon, like Aldrovandus (1600), who styles it *Columba vulgo Indica dicta*, though Mr. Moore gives the Latin name as *Columba Numidica*. These Pigeons, I have been informed, are much prized in India; and I have seen an excellent specimen, twenty-two years old, that was brought by a French gentleman from the West Indies.

The Barb much resembles the other Warted or Wattled Pigeons, but is more compact, and has the shortest beak of any of them; like them, too, its purest colour is black. The head should be thick and broad, the broader the better; the beak, also, thick and very short, bearing a small wattle on it. Aldrovandus says the eyes are Crocus-coloured, but English fanciers prefer them pearl, and they are surrounded by a broad cere of naked, red skin—the broader, evenner, and redder it is, the more are the birds esteemed; the neck long and thin; the chest full; the body long; the feet rather stout, and the pinion feathers very long. They are of medium size, though the English fanciers have rather dwarfed them; and, much as I admire the short, compact form of an Almond Tumbler in that bird, yet, in this breed, I consider it as a departure from the true type. Tastes may differ, but, nevertheless, I consider it most correct to maintain the original form. The genuine plumage is coal black, though many other colours are obtainable, as dun, white, red, yellow, blue, and pied. Some, too, have turned crowns; but this is evidently derived from a cross, perhaps very remote, while others have a frill on the chest, which undoubtedly arises from a cross with the Owl or Turbit, a very common practice in Germany. White Barbs, like other White-wattled Pigeons, are generally bull-eyed, a defect that detracts greatly from their value. The fancy points of the breed to which the most importance is attached consist in, first, the breadth, evenness, and bright red colour of the cere

round the eyes. This is narrower in young birds, and does not attain its full size till the bird is four years of age; the cere, too, often loses its redness during sickness or from age. The second point I regard is the shortness and thickness of the beak; the third, the width and form of the head. Then there are other characteristics in the form of the body or general shape of the bird not noticed by many fanciers, and which are much more observable in many of the continental birds than in our own. In them the neck is rather long, thin near the head, and stout where it joins the body, being slightly curved forwards in front; the shoulders are wide, and the tail and pinion feathers long. These last peculiarities of the breed have been lost sight of by English fanciers, owing to the greater attention paid to the eye and head. They are a very pure race, and stand high in the estimation of amateurs as Fancy Pigeons.—B. P. BRENT.

OUR LETTER BOX.

THE PRIZES AT ANERLEY POULTRY SHOW.—"Can you give me any information as to when we are likely to receive the prizes of the late Anerley Show, or even if ever?—G. R."

[The above is only one of the many notes which we continue to receive on this subject. We communicated with the Secretary of the Anerley Show, and received assurances that all the prizes but one had been paid. In this he appears to have been mistaken; and as the members of the Committee seem to wish to shuffle out of the loss they incurred, we can only advise every prize-winner, without any exception, to proceed in the County Court against some member of the Committee. We are told that the Committee will lose heavily by the Show, and we regret that such is the case; but that no more justifies them in "repudiating" their debts than the inconvenience of paying justified the American States in repudiating theirs.]

SOAPING PIGEONS' WINGS.—I would beg to endorse Mr. Tegetmeier's remarks as to soaping the wings of Pigeons to prevent their flying for a short time. I have very successfully done so since seeing the advice, and can safely say that I believe there is no better plan for attaining the like object.—B., Kenilworth.

SWELLINGS NEAR THE EYES OF SPANISH CHICKENS.—"My Spanish chickens have many of them a swelling, some on one side, some on both, before the eye, between the eye and the beak. In some of them it seems to have been overcome in the course of nature; others are still disfigured by it. It is not a puffy swelling of the eye-lids, as in rumpy fowls, but a tumour, like a Pea, under the skin. The eyes are rather affected, and there is a little snuffling in the nose. The birds run about the fields, and pick out the very insides of my growing Mangold Wurtzel, and live upon corn, bran, and pollard. They sit rather too close on the roost in a good barn; but that is their own choice, and is the only thing which seems to me unhealthy in any of their antecedents.—RUSTICUS A. B.

[I believe the swelling here described, which I have often seen (in fact, a Dorking hen was forwarded to me to-day in which it existed), to be an affection of the lachrymal duct, or tear passage, leading from the angle of the eye into the nasal cavity. In a very severe case, where the swelling was very large, I have opened it and removed the tumour. When the swelling has not increased I have never seen any evil arising from its presence beyond the disfigurement it occasions. The peculiarity in this instance is its existence in several fowls at once, as, when occurring in my own birds, the cases have been single. Should any application be desired, friction with any ointment containing iodine offers the best hope of success.—W. B. T.]

LONDON MARKETS.—OCTOBER 27TH.

COVENT GARDEN.

Our remarks of last week will apply pretty generally this; but we may note an increased dullness in business that is not easily accounted for, unless the northern markets are now getting better stocked, as they have, up to the present time, been very extensive customers, thanks to the railways, which can dispatch our most perishable articles to almost any part of the kingdom.

POULTRY.

The market remains in the same state, with a good supply and bad trade. There will not be much alteration till the middle of next month. The supply of Pheasants is greater than it was.

Large Fowls 4s. 6d. to 5s. 0d. each.	Hares 3s. 0d. to 3s. 3d. each.
Smaller do 3s. 0d. to 3s. 6d. "	Ducks 3s. 0d. to 3s. 3d. "
Chickens .. 1s. 9d. to 2s. 6d. "	Geese 6s. 0d. to 7s. 0d. "
Grouse 2s. 0d. to 2s. 3d. "	Rabbits 1s. 5d. to 1s. 6d. "
Partridges.. 1s. 6d. to 1s. 9d. "	Wild ditto 10d. to 1s. "
Pheasants .. 3s. 3d. to 3s. 6d. "	Larks 10d. per doz.

WEEKLY CALENDAR.

Day of Month.	Day of Week.	NOVEMBER 4—10, 1856.	WEATHER NEAR LONDON IN 1855.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock af. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
4	Tu	The streak Moth.	30.123—29.983	46—24	N.E.	.01	1 a 7	26 a 4	9 2	7	16 17	309
5	W	GUNPOWDER PLOT, 1605.	30.180—30.161	50—29	W.	.00	3	24	10 23	8	16 15	310
6	Th	Bunting's note ceases.	30.118—29.988	59—46	S.W.	.02	5	22	11 53	9	16 12	311
7	F	Wood-pigeons flock.	29.857—29.682	55—43	S.W.	.02	7	21	morn.	10	16 9	312
8	S	[WALES born, 1841.	29.587—29.487	52—27	S.W.	.56	9	19	1 20	11	16 4	313
9	SUN	25 SUNDAY AFTER TRINITY. PR.	29.801—29.756	59—40	S.	.02	11	17	2 48	12	15 59	314
10	M	The marbled chestnut Moth.	30.045—29.857	58—36	S.	.00	12	16	4 17	13	15 53	315

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 51.3°, and 37.2°, respectively. The greatest heat, 63°, occurred on the 5th, in 1852; and the lowest cold, 18°, on the 9th, in 1854. During the period 96 days were fine, and on 100 rain fell.

THE October Meeting of the Entomological Society was held on the 6th instant, I. O. Westwood, Esq., F.L.S., Vice-President, in the chair. Donations of numerous Entomological works were announced from the Royal Society, the Society of Arts, the Natural History Society of Geneva, Messrs. Saunders, Walker, Stainton, Guerinmeneville, and Dr. Burmeister, who was present at the meeting, having arrived the previous day from Germany, on his way to Brazil, on a Natural History excursion, undertaken with the view of completing the great works on the Zoology and Geology of that country already commenced by that author.

Mr. Samuel Stevens exhibited a beautiful specimen of the rare *Carabus intricatus*, taken by Mr. Reading in a wood near Plymouth, the old locality recorded by Dr. Leach, which had been doubted by subsequent writers; also, a bottle of liquorice-powder destroyed by the caterpillars of a small Moth, *Tinea fenestrella*. The same insect had also proved very injurious in a cask of flour. Also, a box of small, beautiful Moths belonging to the families *Tineidæ* and *Tortricidæ*, from Moreton Bay, South Australia; and a specimen of the rare British Beetle, *Monohammus Sutor*, taken in an old Ash-tree at Yaxley, in Huntingdonshire.

Mr. Stainton exhibited some very curious cocoons and cases of Lepidopterous larvæ from South Australia; also, some British larvæ preserved in spirits in closed glass tubes. He also read a note from Dr. Collingwood on the preservation of larvæ, so as to preserve their colours and markings.

Mr. Dutton exhibited a remarkable dark variety of *Polyommatus Adonis*, with the ordinary markings nearly effaced. He also stated, that on a recent occasion he had observed *Nomophila hybridalis* in great quantities on the coast of Eastbourne, near Beechey Head, but that, on the following day, not a single specimen was to be found, although the weather was equally fine, and no change had taken place in the wind. Mr. E. Brayley considered that this fact threw a light upon certain peculiarities which had been observed in the deposits of fossil insects, and which had not hitherto been explained.

Mr. Westwood brought for distribution among the members specimens of *Lophyrus rufus*, of which he had reared a number of females only, from larvæ received from a correspondent. Other larvæ which he had taken at Oatlands had, however, produced both the sexes. He also mentioned various other instances in which specimens of only one sex of different species had been

observed. The queen of the hive, for instance, occasionally only deposits male eggs; on the other hand, females only of the British Ink Gall had been hitherto reared in great numbers by several observers. He also brought for distribution a number of specimens of the small Honeycomb Moth, *Galleria alvearia*, the larvæ of which had entirely destroyed a case of preparations illustrative of the products obtained from insects, exhibited by him in the Trade Museum formed at the Society of Arts during the summer of 1855. He also mentioned various peculiarities relative to their economy, and likewise communicated a letter received from Mr. Yarrell shortly previous to his decease, concerning the great scarcity of the May Fly in the trout streams of various parts of the country during the past season, together with the equally curious fact that the fish would not touch the imitation fly used by anglers. He also presented, on the part of Mr. Spence, a box of minute and very interesting insects of all orders, collected by Mr. Thwaites, the talented curator of the Botanic Garden at Paradenia, in Ceylon.

Mr. Nuneham exhibited the rare Moth, *Yponomeuta 20-punctata*, which had been reared from larvæ found upon *Sedum Telephium*, near Guildford. The insect had been proved to be double-brooded.

Mr. Waterhouse mentioned a remarkable instance of the destructive powers of the small *Honeycomb Moth*. Having placed some specimens in a glass vase, the top of which was covered by a thick quarto volume, the larvæ had eaten their way entirely through the book, and effected their escape into the room, where they attacked other articles.

Mr. Moore exhibited specimens illustrating the history of *Lophyrus rufus*, found at Mickleham. All the specimens which he had reared had also proved to be females.

Mr. Syme exhibited the larvæ of the rare *Deilephila Galii*, taken at Deal. The young larvæ were quite unlike the full-grown ones, the former being green, and very like those of *Macroglossa stellatarum*, whilst the latter were black, with red spots.

Mr. F. Smith read the description of a singular new species of Bee from South Australia, remarkable for having bipectinated antennæ, a peculiarity hitherto only observed on two or three other species of aculeate Hymenoptera.

PRUNING THE GOOSEBERRY.

PRUNING, although understood by professionals, is not so by thousands of amateurs and untried men. For the latter class I intend to offer a little plain advice detailing the practical minutiae which belong to pruning. It may be here observed, that some classification of the bushes is necessary in order to understand the question aright. The following points may serve to classify them:—

- 1st. Mode of growth.
- 2nd. Age of the bush.
- 3rd. Vigour of the bush.

As to the mode of growth, it must be tolerably obvious to most Gooseberry growers, that a drooping tree whose points touch the soil should not be pruned exactly similarly to one that grows upright. As an instance of the former I may quote the *Warrington*, and of the latter the old *Champagne*. Gooseberries are seldom trained on stems sufficiently tall in the nurseries, especially the drooping kinds, which should, in my opinion, be on stems a foot high at least. I will now proceed to the details of the pruning, and will suppose the first case to be a drooping bush, such as the *Warrington*. In almost all cases of Gooseberry pruning, thinning out is the first operation; but I have had cases of strong-growing droopers in which it was expedient to have recourse to the hedge shears previously to venturing in with the knife. By removing many of the tips of the shoots with a light hand the knife may be passed freely amongst them, and the thinning out performed both with greater ease and precision. It is an established maxim to keep the centre of the bush very open; for thin how we may, it is almost sure to become filled up during the following summer. Indeed, under all circumstances, it is far better to depend for the crop on those exterior portions which are exposed to the light than on any amount of interior shoots.

In looking carefully over the interior of the bush many shoots of the past summer may be perceived, which, springing from old spurs of former years situated on the main branches, are forced up perpendicularly, or, indeed, sometimes converge. Most of these are useless, and nothing can justify the retention of many but a lack of exterior shoots. Every shoot should assuredly be pruned away which springs up in the very centre; for in a well-pruned tree, when finished, there should be a hollow cylinder kind of opening down the middle of at least six inches in diameter; that is to say, in trees of any size and age. After this, what spray is left should be about six inches apart in the interior, and so selected as to point rather towards the outside of the tree.

Now we come to the thinning out of the outside portion, for this, too, must be carefully thinned; not so much, however, as the interior, as before observed, for on all that freely presents itself to the light I depend for my principal crop. It is well here to observe, however, that in the event of very late and severe frosts, and when the Gooseberries are just coming into berry, I have sometimes known the chief of the crop in the interior of the bush. I may here at once offer an opinion as to the average distance at which the young shoots should be left; but, as kinds differ so much as to mode of growth, a few preliminary observations will be necessary. Some of the huge "show berries" produce foliage of an enormous size, as, also, much longer and stouter footstalks to the leaves. Many of our best dessert berries, such as the *Early Green Hairy*, the *Pitmaston Green-Gage*, the *Small Early Yellow*, and the *Champagne*, are just the reverse—small, round, and compact leaves on the smallest amount of footstalk. Need I inform the reader here that on the shading character of the foliage should depend

the distances at which the shoots should stand apart? Supposing, then, in order to assist those who have indistinct ideas on this subject, that a bush in question has abundance of young shoots to thin, that it is a very large kind, and that the object is the largest crop of the largest berries, six inches I should consider an average distance; but if required for exhibition, I suppose our Gooseberry fanciers would thin them to at least nine inches. But be the kind one of those very small dessert sorts before alluded to, and three to four inches may suffice. As for the intermediates, which will, indeed, comprise by far the most numerous and most useful class, I should give five inches as the most useful on an average. In thinning out it is necessary to prune close to the main branch, unless it is a very lean tree, and requires to be excited to make wood; this, however, argues previous mismanagement or an ungenial soil. If the bushes be not pruned close the sure consequence is a profusion of stem-shoots in the interior, which will not only give the workman a deal of trouble in the ensuing year, but must detract from the general powers of the bush.

We come now to the shortening process, which will complete the pruner's labours for the present. If I were required to lay down a rule for shortening, it should be this:—Prune away all that you think the bush cannot consistently sustain in its present position without drooping on its fellow shoots. There are many reasons, however, why we should occasionally deviate from this rule, bending to circumstances too important to be slighted. I have before observed that the young shoots of Gooseberries dip, or form curves of very different character; this is one reason why shortening should differ. Another may be found in the fact that the extreme points of some shoots are very imperfect, whether through blight, unripeness, or leanness. Here, then, is a reason for removing at least the defective portion. As an average guide to the inexperienced I may, however, say, remove something near one fourth part of the whole length of young spray.

The bushes are now pruned; but are the operator's labours entirely over? I answer, No! Have we forgotten that sad pest of the Gooseberry, the "caterpillar?" As this pest in its transformation is understood to take to the soil during the winter, I advise those who have time to pursue the old practice of burying the surface-soil around the bushes. This is done by opening a trench around the bushes at about two feet distance, and paring all the surface-soil over the roots of the bushes into the trench, removing about three inches. This must be stamped down; and here an opportunity occurs of introducing some manurial matters, as also of covering the surface of the roots thus robbed with a surface-dressing of any kind, according to the needs of the bushes.

Before quitting the subject of Gooseberry dressing, which is, doubtless, better accomplished in the beginning of November than at any other time, for a double if not a triple reason, I may here point to a practice which, although somewhat at variance with established principles, is an expedient worthy of a moment's consideration by those who have suffered much from the depredations of insect enemies, the frost, &c. It consists simply in leaving an extra quantity of young spray in the bushes, in order to provide against contingencies. Those who do so, however, must lay their account with confusion in the bushes, unless they wait on them the moment the crop is secured. The attention requisite will consist, of course, in thinning out superfluous shoots, and, doubtless, in preferring to remove the barren ones.

R. ERRINGTON.

CLAPTON NURSERY.

(Continued from page 6.)

BEDDING AND OTHER GERANIUMS.—The only white, or nearly white, bedding Geraniums that I could see here were the *Countess*, *Duchess of Sutherland*, *Glaucum grandiflorum* and *virginicum*; all mixed-border kinds, however, the *Duchess* being the nearest to a regular bedder. As we have not a single good white bedding Geranium yet of this class, I mention those as the best to cross from, and *Countess* to be the mother in every instance. *Virginicum* will cross-cut the new section, which is represented by *Countess*, and give us large-leaved seedlings. Pity it should be so; but there is no help for it. The flowers will be first rate, however. *Picturatum*, which is the best of them for cut flowers, and for a mixed border. *Nutans*, one of the very best of the *Quercifoliums*, and well suited to match *Quercifolium superbum*, or *coccineum*, or *eximium*. *Pretty Polly*, a good mixed-border plant, which is never out of bloom the whole season of the scarlet breed. The best of the more recent kinds were *Coomb Bank Rival*, a rich, dark scarlet; *Lady Smythe*, a shaded scarlet, with large truss and large flower. These two, with *General Pelissier*, *Defiance*, two good scarlets; *Mrs. Lawton*, cherry colour; *Rubens*, pinky; and *Triomphe de Mont Rouge*, the best of the blush-white ones, are all admirably suited for large pot specimens; while the new strain from *Baron Hugel* gives us an endless variety of dwarf plants with scarlet flowers and white eyes. *Bishopstowe* and *Dazzle* were the best two of this strain here, though not, perhaps, the best of that strain. Another dwarf kind, *Countess of Bective*, from the Wellington Road Nursery, must be crossed with the breed of *Baron Hugel* to give us by far the best bedders of the race. They will grow in the richest soil, or in the dampest situations, without "running into leaf," which is the greatest fault of the old kinds. Neither at Clapton nor at the Wellington Road Nursery does this last *Countess* grow stronger than *Baron Hugel*, and the flowers are like those of *Kingsbury Pet*. This *Pet*, like *Countess of Bective*, the *Baron Hugel*, and *Frogmore Seedling*, a light rosy cross from *Princess Royal*, alias *Baron Hugel*, in Her Majesty's garden three years since, are my own three favourite dwarf pot-plants. Get them and *Tidworth Seedling*, with *Dazzle* and *Bishopstowe Scarlet*, and cross the whole in any way you choose, and my word for it, you will not have a bad seedling out of a score; and that is just one hundred times more than can be said of any other equal number of all the Geraniums in the world. The *Baron* gives no pollen, and *Countess of Bective* is shy that way; but the delicate, dear little *Frogmore Seedling* is prodigal in pollen, and seeds like a Groundsel; nothing in the way of pollen comes amiss to it or to the *Baron*.

Among a large number of *Pentstemons* I noted *Magnifica* as the best dark crimson one I had yet seen; it is of the so-called *Gentianoides* strain. *Lysimachia Leschenaultia* flowers till the frost puts a stop to it; is quite hardy, rather new, and looks in the borders much like *Daphne cneorum* both in growth and flower. *Bouvardia angustifolia* and *leiantha* seemed to me to be the brightest of that tribe for beds. *Leiantha* was then the very best. *Bouvardia* I had never seen planted out of doors. Next to them, but for mixed borders in summer, a collection of *Stylidium* put me in mind of how many of the good old half-greenhouse, half out-of-door plants we neglect for gold and silver leaves, and for anything to "bed." The "ruling powers," like the ruling passion, must have *their* way, whether they be in parliaments or petticoats, and so botanicals have to give place to bedders; but beds are no "bedding" unless some mixed borders are not far off. I shall turn London inside out this winter if I am spared, to see what we really possess for winter decoration, and for

mixed beds and borders, because it is of little use to hammer at such things in the sight of beds and blazing flowers during the summer months. I would have every *Stylidium* in the country in my *sanctum* border for mixed plants, and I would pot them off with the bedders in the autumn, and keep them over the winter in cold frames. *Salvia porphyrantha* is another choice bit for the same border, and Mr. Low grows loads of it, and is obliged to do so, because some people forget to take it up in time, and lose it by frost, while others make it into beds—as was stated lately in THE COTTAGE GARDENER—on the authority of *The Botanical Magazine*, and, finding it will not do, they pull it up at the wrong time, and so lose it that way; but, once seen in a good patch, they must all of them have it back again; therefore, till wisdom is learned through the purse, nurserymen must keep a stock of this pretty little *Salvia*. *Sprengelia incarnata*, the oldest plant in Europe when I was a boy—and a better plant for a mixed border has not been introduced since—is as hardy as a Cowslip, and takes up no more room. I have not seen it for years in such quantities and perfection. *Nierembergia intermedia* as good and as numerous, and although it is said to be "miffy," it never "sulks," only takes a long time to rest, and during that time it will not be pushed. It is one of the best of the good old family gems and jewels. *Silene acaulis alba*, *Sedum grandiflorum* and *hybridum*, *Lychnis Bungeana*, *Linum flavum*, *Epimedium violaceum*, *grandiflorum*, and *carneum*, *Jeffersonia diphylla*, *Liatris pumila*, *Statice Wildenowii*, *miniata*, and *Tatarica*, *Primula viscosa* and *involverata*, *Galax aphylla*, with lots of *Daphne cneorum* and *Erica carnea*, two sorts that ought to be as common on first-rate borders as *Tom Thumbs* are in the beds.

But of all the mixed-border plants in this nursery, and of all the *Phloxes* I had hitherto seen, a new lot here, which were sent over from France this last spring pleased me the most. I must also say of them that, out of all the tribes, Mr. Low, sen., took most pride in showing me his new *Phloxes*. He said that he spent heaps of money on *Phloxes* every year for a long time, and never had a real good assortment of them till now. The batch of seedlings is a "collection of eighteen new varieties of fine dwarf, robust habit, raised by M. Lierval, of Paris;" and the following is the cream of them:—*Libianus*, lavender ground colour, with a bold, white eye. *Sambe*, alias *Jean Baptiste*, light rose, and not more than nine inches high; *Eusche*, rose, with deep carmine eye, and good stiff habit. *Lavinia*, a good dwarf white, better than *Omniiflora*, the best white of the older kinds. *Leo Baron*, in the way of *Countess of Holme*, but a larger truss and flower. *Volery*, a very rich shaded rose. *Rigolette*, a very distinct kind, rose and blush variegated in the same truss. *Marshal St. Arnaud*, a self, very rich pink. *L'Abbé Béranger*, between peach and French white, with a starry eye. *Madame Villard*, blush white, very large truss. *Madame Thaumond*, deep, rich, reddish purple; fine. *Marquis Gouvion de St. Cyr*, a most beautiful large kind, rich salmon colour. *M. Rical*, a good peach colour. *Madame Lacroix*, fine light purple, shaded and variegated in the same truss. *Madame Cambacères*, lavender, and lighter eye, one of the most lady-like flowers of them all, except *St. Cyr*. Out of all the old ones, a John-Bull-like name, *Purpurea superba*—double adjective again—was really all that the extravagant name implies. Now, all these, and all above them this day, would suit the south and south-west borders under a low terrace wall, for which a mixture of fine flowers was asked the other day.

Immense quantities of the new-fruited *Eugenia Ugni* are here. *Myrtus bullata*, from New Zealand, would give one a good idea of the brown tint so prevalent in plants from that quarter. *Pleroma elegans*, in great

numbers, for country orders, as most people can manage it now—one of the very best greenhouse plants of late introduction; ditto, about one of the oldest *Wilsonia corymbosa*. The only secret is to give it sandy peat only, to put in a frame in winter, and out in summer. What a splendid autumn bed it makes, or rather, an edge all round a bed of *Gladioluses*.

There were 3000 *Pinus Benthamii*, one of the finest of them all, in pots, and plunged. A new (to me) *Clematis flava*, a true Canary yellow, the flowers of the size of *C. Hendersonii*, but is of the *Flammula* section. Thousands of seedlings of *Podocarpus nubigera*, which will come the nearest to *Araucaria imbricata*, a native of Patagonia, and northwards to the limits of the *Araucaria* region. This is, unquestionably, one of the most distinct Conifers that have been introduced of late years. A dried specimen tree, which was sent over with the seeds, proves all this. *Podocarpus Andina*, also from Patagonia, is next to *Nubigera* in interest. The *Thuja gigantea*, alias *Libocedrus decurrens*, grows apace, and reveals its real beauty more and more each time one sees it.

But we must get inside the houses to note a new propagating-house, of which Mr. Low is as proud as I was of the first pair of real shoes I had. He wrote on the mysteries of propagation, and on a new propagating-house, in the first volume of *Loudon's Gardener's Magazine*, in 1826; and the subject has not been absent from his mind from that day to this, except Sundays, of course; and this house is the perfection of experience in the matter. The length is seventy-five feet, and twelve feet wide; a glass division in the middle, a path down the centre, and a span roof; a bed on the right and left, over tanks eight inches deep of water, and two pipes running through each of them for bottom-heat. For top-heat, the pipes run along the sides of the path, and the wall of the bed is arched a little to allow the pipes to be "flush" with the face of it, and so to be out of the way. Over the back bed, which is the keeper of the grand secrets, are lights glazed with Hartley's fluted glass, which requires no shading there. This is not roof glass, but lights like Cucumber lights, over the best propagating-bed inside, and, when a bell-glass is over cuttings, there will be three coverings of glass in all. I have often said, they never keep the grand secrets from me in the nurseries, although I cannot keep a secret for all the world. When cuttings are potted off, they stand over the front bed, from there they are removed to the other division, and thence to all parts of the world. The first "grand secret" I found was, lots and lots of the blue *Allamanda* (*A. violacea* of Gardener).

In Gardener's narratives of his routes in Brazil, published in the *Journal of the Horticultural Society*, vol. iii., page 151, is the only notice we have of this fine plant. "One of the finest plants met with at this time was a most beautiful new species of *Allamanda* (which he named *Violacea*), a shrub from four to six feet high, bearing numerous large flowers, not unlike those of *Gloxinia speciosa* in colour. This is by far the most beautiful species belonging to the genus, all of which, with this exception, bear yellow flowers." "By far the most" fortunate man in England am I for being the first to tell you of the lots and lots of cuttings of the blue *Allamanda* in that bed. They are now potted off, and will be at your service next March or April, or as soon as it is safe to haul them about. I little thought that I should live to see the blue *Allamanda*, but I did see it; and I do say that it is a lucky hit for me to be the first to announce the fact to the nations, kindreds, and kingdoms through which circulate these pages.

To get cuttings of the *Norfolk Island Pine*, all you have to do is to break off the leading bud a little before its starting. Four or five leaders come up for it, or in place of it; and each of them roots as easily as we

root Searlet Geraniums. *Begonia Saundersonii*, a cross between *Semperflorens* and *Ingramii*, is one of the most useful, as it blooms till "bloom comes again," or from May till April. It does not take up much room, looks well, and is sweet-scented at night. A real shot-silk leaved *Begonia*, called *Leichkeimii* (pronounced *Lee-keh-ni*). The leaves of this wonderful *Begonia* are red and purple, in shot-silk-like shades from September to April, and silvery-white in summer. It is of the same breed as *Zanthina*. *Lasiandra Hooilrenkii* (Baron Hugel's late gardener), a beautiful Mexican Melastomad, related to *Pleroma*. Mr. Hooilrenk, one of the best practical botanists in Europe after Mr. Smith, the Curator of Kew Gardens, was gardener to Baron Hugel for many years; but the Baron gave him several of his glass houses, and he is now a nurseryman on his own account on the other side of the way from Baron Hugel's, and four miles from Vienna: both of them are well known to London gardeners.

A new dwarf *Amaranthus* from Java would make a nice edging-plant along the side of a stove-bed or platform. *Pentas rosea* is used for cut flowers all winter. *Maranta pardina*, with two sets of panther spots along each leaf. *Maranta metallica*, with two shades of green and a shade of purple in each leaf. *Encholirium Jonghei*, a fine new Vriesia-like flowering-plant from Brazil; the dried flower-stalk is a yard high. *Nepenthes*, or Pitcher Plants, come from cuttings here as freely as bedding-plants.

D. BEATON.

ANSWERS TO BEGINNERS.

POINSETTIA PULCHERRIMA.—"My plants were very lanky, and I stopped them all over in the end of July, to make them more bushy. They are yet in cold pits—leaves getting yellow—shoots small, but numerous, and no appearance of flower-buds. What is wrong?"—Much. Remove them from the cold pits to where they can have from 50° to 60° at least. This will stop the yellowing of the leaves, and help to ripen the back buds for next season. As to flowers, if you have any, they will be small. The flowers, of course, you know, at any time are not much. The crimson bracts, or floral leaves, are the great attraction; and a mass of them, resembling in width an old-fashioned, broad-brimmed, blue bonnet, can only be obtained from the points of strong, well-matured shoots. Do what you will there are many plants which will never be cut into a bush-form, and this is one of them. All you can do with an oldish plant is, to get a certain number of shoots to start somewhat equal in strength at first, and to secure several shoots on young plants. No stopping should take place after the end of May. The plants grow freely in peat and loam, with a little broken bricks and lime-rubbish; and, when growing freely, will be benefited by a mulching of rotten old cow-dung. After the middle of June they must have all the light possible, and a fair amount of heat. For this latter purpose they may be kept in a forcing-house, plant stove, or, until the middle of September, in a cold pit, kept moist and close. After that, the plants should have more air and less water, and be secured from cold nights, and they will show to advantage in November and December. When done flowering keep the plants dryish, so that they do not shrivel. Pack them close together when the leaves fall, and anywhere, so that the temperature ranges from 45° to 50°. In spring prune back to the last bud or two on the last year's shoots. When the buds are started, repot and grow on again for next year. The beautiful *Euphorbia Jacquiniflora* must be treated somewhat similarly, only it need not be pruned back so much in spring, and it must have kinder and warmer treatment when the flowering is finished. It

likes a little broken bricks and sandstone mixed with the peat and loam used as compost.

CASSIA CORYMBOSA.—"I have had plants of these very fine planted out in summer. I have lifted and repotted them. Should I prune them back now, or wait till spring?"—Wait until spring. The check given will cause the leaves most likely to fall gradually, more especially if you place the plants in a greenhouse; but, though the leaves fall, the flower-buds will continue to open for most of the winter, and the plants will look well among other plants that have plenty of foliage. By March or so you will see where the buds break, and then you will see best how to prune. After giving a partial hardening under a little protection the plants will be in good order for turning out in the end of May. It grows far more healthy in the open air, in summer, than in a plant stove, and, as the roots do not wander far, it is easily lifted. Some inquiries have been made as to its fitness for a bed, and, though I have not tried it, I have no doubt that plants two or three years old, and lifted every year, would do very well for largish beds, especially if a few of the larger leaves were pulled off now and then. Neither hot, dry weather, nor dull, wet weather, seems to prevent a constant succession of bloom.

ALOYSIA CITRIODORA.—"I am anxious to get quantities of the leaves of this plant for mixing with Rose-leaves, &c., for perfume; but whether in pots in beds, or against walls, I cannot get it to grow freely. I am considerably north of London."—Two fine plants against a house-wall, one on each side of the doorway of Mr. Bogue's cottage, at Gorhambury, near St. Alban's, have stood and flourished for a number of years. Whole sheaves of shoots might be cut from these two plants. They are cut down regularly every winter at the approach of frost; dry ashes, or tan, &c., placed over the roots, and the stumps of the stems left; moss, or other non-conducting material, placed over all, and extended beyond the roots, and all covered by a mat or cloth in a conical form. By these means frost and wet are alike excluded, the young shoots come away strong in April and May, the covering is removed, a little protection given them at first, and by the autumn the shoots are like walking-sticks, and from one to two yards in length. If not too far north the same system of keeping frost and wet from the roots would answer in beds, though requiring more care than when against a wall. Where this care would be deemed too troublesome the plants should be taken up in the end of October, pruned-in pretty closely, and packed beneath the stage of a greenhouse, or in any shed or outhouse from whence severe frost can be excluded. I have kept them in an openshed, roots and stems covered with earth, and a covering of hay over all. I never met with a person who did not like a sprig of this sweet-leaved plant, and many a reader may thus easily have the scent near the window of the sitting-room.

TALL SCARLET AND PURPLE LOBELIAS.—"My plants, in pots and beds, have done little good. I kept the stools below the stage of a greenhouse in winter, and many of the sucker-plants rotted and got sickly, and to this I partly attribute my failure."—The roots, when taken up, could not have been in a better place; but, when the suckers begin to come thickly, they choke and damp off each other. A partial remedy for this is keeping them dryish. Another, and a very effectual one, was noticed by Mr. Appleby lately, namely, dividing the root into a number of pieces. Several of these young shoots in a piece may be kept together before planting-out time in beds; but, if fine flower-stems are wanted, they should be divided, and grown separately before being planted. This must be especially done when fine grenadier-looking flower-stems are wanted in pots. About the middle of March each of these sucker-like shoots should be placed in a small pot, and be plunged in a

gentle, sweet hotbed, and shifted into larger and larger pots as soon as the roots get to the outside of the ball. Light, rich compost is best at first, and the last shifting into 8-inch or 12-inch pots should have strong loam and old cow-dung. Until the flower stems begin to show, the plants will rejoice in a little bottom-heat. Everything should be done to encourage fine, large, healthy foliage, and then the flower-stem will become strong. This I like to give its own way in a pot, leaving the smaller side-shoots to come as they please. When I have wanted a dense, compact bed of bloom, I have picked out the point of this shoot when six inches or so in height, and then a number of weaker ones started from the buds, and produced a better mass. For late flowering in beds the pieces may be planted out at once in May; but they will not flower so well nor so early as those treated in the way just mentioned.

DWARF BLUE LOBELIA.—"I see that *Speciosa* is recommended as the best dwarf for a bed—better than *Ramosoides*. Is it very different, and superior to the old *Speciosa*?"—Very different indeed. I think it a pity that the new variety should be called *Speciosa*, as there is an old one under that name that comes quite freely from seed, and, from its loose, rambling, and free growth, is yet invaluable for hanging over baskets and vases. I have had some nearly three feet in length hanging all round a vase, and of a light, pretty blue. Well-treated, it would suit the smaller baskets in the Crystal Palace. The new *Speciosa* is the best of all the dwarfs. It seeds, though not freely—is compact in growth—has flowers about double the size of *Ramosoides*, or *Erinus maxima*, and propagates much easier than either. Try and get an old plant now, and you may have hundreds and thousands of it before the middle of May.

ERYTHRINA CRISTAGALLI.—"I have tried this as recommended some time ago for beds, and against a wall; but have had little success."—Perhaps your plants were not old enough, or your place is too far north, or too much exposed. All that was said of its success in previous volumes was strictly correct at the places named. Do not despair; your plants will be getting older, and the larger and fleshier the roots, the better will your plants succeed, because they will throw much stronger shoots. Those against a wall should be treated as has been detailed for *Aloysia*. Those in beds may also be so treated in favourable positions; but, in general, it is best to raise and pot them, and keep them from frost, as beneath the stage of a greenhouse, until they begin to shoot freely, when they must have more light, and be hardened off by degrees before planting out. If the shoots are very numerous they will require thinning when young.

R. FISH.

(To be continued.)

PRESERVING VEGETABLES IN WINTER.

NEXT to the credit of growing and maturing a good article is that of preserving it in the best condition for use at a future time. This last duty is more especially necessary at this season, since the growth of many things will have been perfected, and others will have ceased to grow so freely as before, and, when severe weather sets in, its future progress will have ceased altogether; besides which it is likely that the extreme cold or wet will have hastened the plant on to the last stage of its existence—the state of decay. Under these circumstances I make no apology for devoting the present chapter to the preservation of vegetables wanted for winter.

BROCCOLI.—This useful article, coming into use all through the winter when well managed, and the season not unusually severe, and even then may be made to do

so when the necessary means of protection are at hand, is, nevertheless, very often mismanaged, so as to often present but a sorry feature in spring, a severe frost either killing them or injuring them to such an extent as to prevent their ever attaining a good useful size. This is more especially the case where the plants have been growing on a piece of rich ground, and have continued their growth until late in the autumn, and attained that luxuriant, delicate habit which unfits them for enduring frost. The ordinary way to deal with these is to lay them on their sides, and confine them there; and, in extensive plantations, I do not know of any better mode. The plan is this:—Supposing the rows run north and south, then begin at the west side of the piece, and with the spade take out a small spit of earth from the west side of each plant, and close to the collar, and with the foot bend the plant down that way, taking a spit of earth from the collar of the next plant, and laying it upon the plant bent down to keep it so, and proceed in that way until the whole piece be finished. Where the rows run the reverse way, lay the plants to face the north, as, by either laying it to the north or west, it escapes the evils of facing a bright sun after a frosty night. In a general way the west will be found better than the north; and, though there is no doubt but the fractures the plant receives at the roots check it considerably, it is, nevertheless, true that it places it in a better condition to resist frost than it otherwise would have been in. The kinds most advisable to treat this way are all those which are expected to come into use after Christmas. Those for the autumn might, perhaps, stand unaltered, or the more delicate ones might be taken up, and transplanted into some cold frame, out-building, or other sheltered situation, where they might perfect their growth. Any sort of a building will do where the plant can have light and protection from very severe weather. It is more comfortable to get at Broccoli so secured than when hard frozen in the open ground, as they often are for weeks together in sharp winters, and in cold, exposed situations in the north.

A very good way of saving heads that have arrived at maturity is to take the whole plant up, strip off all the large leaves, and cut a little off the root; then bury it with its head downwards in peat earth, where it will keep sound a long time. Cabbages of the *Drumhead* or *Scotch* kind are often treated so in ordinary soil; but slugs are less plentiful in peat earth; and, altogether, the heads of Broccoli keep better there than by any other mode I have seen adopted. Hanging them up in a cellar or other cool place is also very good; and in mid-winter it is often necessary to adopt this plan. It is best to have a good proportion of stem to each plant when it is hung up or bedded-in, as the head derives much support from that source.

ENDIVE.—This useful winter salad is difficult to preserve out of doors in severe weather; therefore it is better to take up a quantity of nicely-blanchéd heads about the middle of December, or before if it threatens to be hard weather, and, after taking off some of the outer useless leaves, plant them in some nice dry material under cover. Light, in this case, is not so necessary as for the Broccoli, as the plants, or, at least, a part of them, must be covered up, to preserve their blanched appearance. They must each have a nice ball of earth attached to their roots, as they may be called on to survive some weeks. It is not unusual to plant them tolerably thick in sand, as the roots make no further progress, and the sand is as good a non-decaying material as anything they can have. Any dry, open shed will do where they can be protected from severe frosts. The principal thing is to save them from the wet, that so quickly hastens their decay; but, on the other hand, the dry, warm air of a shed heated by fire is injurious to them, parching them up, and rendering them tough instead of

crisp; in fact, the only thing wanted is to secure them against sharp frosts and the continuous damps to which they are unavoidably subjected when outside at this season.

Another mode is sometimes adopted of hooping over the beds they are planted out upon with strong stakes, and throwing mats over them in hard weather. This is more especially applicable to younger plants, or those in a growing state. A stout hazel rod, seven feet long or so, will bend over a bed of four feet wide, and the ends sticking in the ground are secure; others following about a foot apart, and some nice straight ones to lay on longitudinally, will form the framework of a roof, which may be covered with mats, tarpaulin, or anything else. Where it is not convenient to have the full-grown ones under cover as above, this plan may be adopted for them with advantage.

LETTUCES.—These will not endure the same dark confinement as the last-named plants; it is, therefore, advisable to take up a quantity of full-grown ones, and lay them in frames having glazed lights; they will keep good some time, and be handy to get at; they must be taken up with balls to each, and planted quite upright as before. A little frost will do no particular harm; but do not, by any means, keep them too close, as a good circulation of air is necessary to preserve the plant in health; and be careful to remove all decayed leaves and stems, and, in fact, everything else tending that way. This remark applies, also, to the Endive noticed above; and the younger broods of Lettuce in the open ground may be hooped over as directed for Endive, that mode of protection being applicable many ways, taking care, however, only to cover when wanted.

PARSLEY.—In some very cold or exposed situations this article is not able to stand the winter without being so much injured as almost to render it useless. In such cases it is advisable to cover some up with mats, &c., as above. A frame, certainly, would be better; but mats will do for the early part of winter. But it would be well to take up a few plants in autumn, and plant them in deep boxes, or they might be potted, and set in some warm, light place. They will speedily put forth fresh leaves, and continue the supply until those out of doors come into use in spring. Very little warmth is wanted here. The great object is to start in time, and not wait until the Parsley be absolutely wanted for table, and then to hurry it on with a powerful heat. Any odd corner that is sufficiently light will do for it.

CELERY.—Little can be added to that already given at page 23 of the present volume, only it must be borne in mind that this vegetable will not keep fresh very long out of the ground; and it is only to supply the wants of the family in severe weather that we advise its being taken up and housed, as the plant is sufficiently hardy to withstand most of our winters; but the amateur having the run of a timber-yard may protect his rows of Celery very much by a couple of boards, with their edges nailed together so as to form a sort of ridge, which might lie over the plants in wet and severe weather, as these changes in alternate course hasten this vegetable to decay.

TURNIPS.—These also suffer much from frost; therefore, before hard weather sets in, or when you think it is likely to do so, take up a quantity of nice, useful-sized Turnips, and reduce the length of top, and also of root, not cutting either entirely away, and place them in some open shed or other sheltered situation, amongst sand or dry soil, so that the root and part of the bulb may be covered with it. In this medium they will keep a long time in cold weather; but when warm weather returns they will start, and grow as well as those outside. Some people cut the root and top entirely off, and bury them in sand; but I think they lose

too much by that severe amputation; thus I like the half-cutting off better.

ONIONS.—A dry, cold, airy loft is best for the store Onions, and do not let them lie more than two or three bulbs thick, and often look them over, and pull out bad ones. Do not remove any of the outer rind but what comes off in the handling. They also keep well in ropes and hung up, the easiest way to make which is to tie them on to a hay or straw-band, which is better than a stake. This plan is useful where shelf room is scarce; but the points to observe are a cool, airy situation, warmth and moisture being more inimical to their keeping than frost.

RED BEET, PARSNIPS, SALSIFY, &c.—These being tolerably hardy, and not likely to be injured by worms, slugs, and other similar enemies, might remain in the ground until the warmth of spring starts them into growth. Parsnips are even said to be better there; but it is also advisable to take up a few, and lay them in sand in some cool place. In taking up Beet be careful not to injure it in any way, and in cutting off the leaves allow an inch or two of the stalk of each to remain, to prevent the colour boiling out in cooking, which it is sure to do if injured. Some growers take up all their crop in autumn; but, in a general way, I have found it keep better in the ground than when taken up.

CARROTS.—These must be dug up in October, otherwise they are liable to suffer from worms and other insects. Packing away in sand is not so general as it was years ago, owing to the numbers that rot every year. This, however, often arises from the heap being too large. It is, therefore, better only to place them in thin layers, or, in default of that, to let them lie indiscriminately on the floor, where the air will have free access to them, and they can be easily examined.

J. ROBSON.

NEW METHOD OF FIXING HOT-WATER PIPES.—NEW GAS STOVE.

THOSE who have had any experience in fixing hot-water pipes in the way which has hitherto been practised know the trouble and almost impossibility there is in rendering them water-tight, and, at the same time, to fix them so as they may be easily removeable. We have frequently seen pipes which have been united by having red lead and hemp forced into a socket become so permanently fixed as to require being broken before they could be removed, or any alteration be made in the arrangement. This has always been a great difficulty, and particularly on the part of those who, either from change of residence or from a desire to reconstruct, have attempted to disunite the lengths of piping. We were much pleased to find recently that this great drawback has been completely and effectually overcome. **MESSRS. SMITH and PHILLIPS**, who advertise in our columns, have succeeded in contriving an arrangement which entirely supersedes the old method, and which is so simple that any handy labourer, or even a gentleman himself who has a turn for mechanics, or is fond of light manual operations, may, without any difficulty, fix any length with as little trouble as he can drive in two screws; for that, in fact, is the whole or the greater part of the operation. When it is required to disunite or altogether to remove the piping, all that requires to be done is simply to undo these two screws or nuts, and the union is severed.

The invention consists in forming at each end of a length of pipe a narrow rim, the outer edges of which are bevelled. When two lengths of pipe are brought in contact by their ends these bevelled edges form a ring. Over the part where the two lengths are brought in contact a socket is fitted, which consists of two halves. In the interior of this socket there is a groove to receive the rim formed on the pipes, and the space inside is wrapped with a piece of webbing saturated with lead, over which the two halves of the socket being placed, they are screwed together by bolts passing through flanges at the sides of each part of the socket. A

perfectly air-tight joint is thus formed; and this we regard as one of the most valuable inventions in garden mechanics which we have met with for several years.

The new gas-heating apparatus which we saw in the same establishment is the best which has come under our notice. It consists of a cylindrical boiler, fitted with flow and return-pipes, and furnished, also, with a flue to carry off the noxious vapour formed by the combustion of the gas. It is highly ornamental, and is the most simple and effectual thing of the kind which we have ever seen; it requires no skill to manage it, and is so cleanly that a lady may attend to it.

WHITE SHRUBBY CALCEOLARIA—GERANIUM DIADEMATUM.

As a good white bedding-plant is still a desideratum, I venture to suggest that some of the cross-breeders should turn their attention to the improvement of the *White Shrubby Calceolaria*. We hear of new yellow ones every year; but no person appears to have taken any heed of this white variety. I presume it seeds, or, at any rate, it yields pollen to inoculate with the yellow sorts. I trust that this void in the flower-garden will, in a few years, be filled up by some enterprising individual producing a good white bedder of this class.

As that fine pink bedding *Geranium Diadematum* is not much known or sought after, and as I have grown it for some years, let me bear testimony to all Mr. Beaton has said about it. It requires a rich soil, and will flower profusely throughout the whole summer and autumn. During the past season it was the most attractive bed in my garden; and, as I grow nearly all the best bedding-plants in cultivation, I am competent to form an accurate opinion of its merits; indeed, to quote our oracle in these matters (Mr. Beaton), "it is the pink of the flower-garden."—R. L.

PLANTING BROCCOLI.

OUR experience in planting Broccoli three feet apart accords with Hardy and Son's plan, page 459, in last volume. Formerly, when we planted them two feet asunder, not only did their leaves interfere with the hearts next to them, but the plants were seldom dry. Wet lodged in the axils of the leaves, or where they join the stems; and need it be said, the effects of frost are more severe there than in any other parts of the plants? Thinning out close crops in autumn not only gives more room, but the removed ones are somewhat checked in growth, by which they are rendered more hardy.

In elevated and dry places, like some parts of Peebleshire, from which Mr. Mercer writes, page 25, where the wind blows among the plants as if they were under a blow-pipe, perhaps Broccoli plants stand the winter better at two feet apart than they do in damp and warmer places at the same distance. His heads of Broccoli, "somewhat larger than teacups," are rather under size. Such would not suit market-gardeners, nor large private families, where the greater part of the Broccoli in spring is consumed by servants. When the sorts are genuine, moderate-sized heads can always be cut in time for the first table.

I may give a passing word respecting the difficulty of getting *Granger's Broccoli* true. The best crops of this late-autumn sort I ever saw were grown by Mr. Gillespie, a market-gardener near Edinburgh; and I can recollect, when a youth, seeing the great care he took in covering his seed-plants with gauze net when in bloom, to prevent bees and flies conveying to them the pollen of other kinds. I never learned the exact time when he sowed or planted for seed. As the general crop is over before the end of winter, those for seed must be treated in some way like Cauliflower plants for spring.—J. WIGHTON.

HOYA IMPERIALIS.

PRESENTED to the Society by Messrs. Veitch and Son, of Exeter, in 1848.

There are two varieties in cultivation of this noble plant: one with long, flat, sharp-pointed leaves, figured in the *Botanical Magazine*, t. 4397; and the present, with shorter, blunter, and wavy leaves, which is what was originally described. Both have large fleshy flowers, greenish on the outside, and stained with deep purple all over the inside of the corolla, the coronet remaining straw coloured, and they are among the finest of the stove-twiners in cultivation. If the purple of the corolla were more brilliant, they would be almost unrivalled.

A strong climbing plant, growing feely in a mixture of sandy peat and leaf-mould, if placed in a strong, moist heat. It is easily increased by cuttings in the usual way, and flowers freely at different times all the summer and autumn.

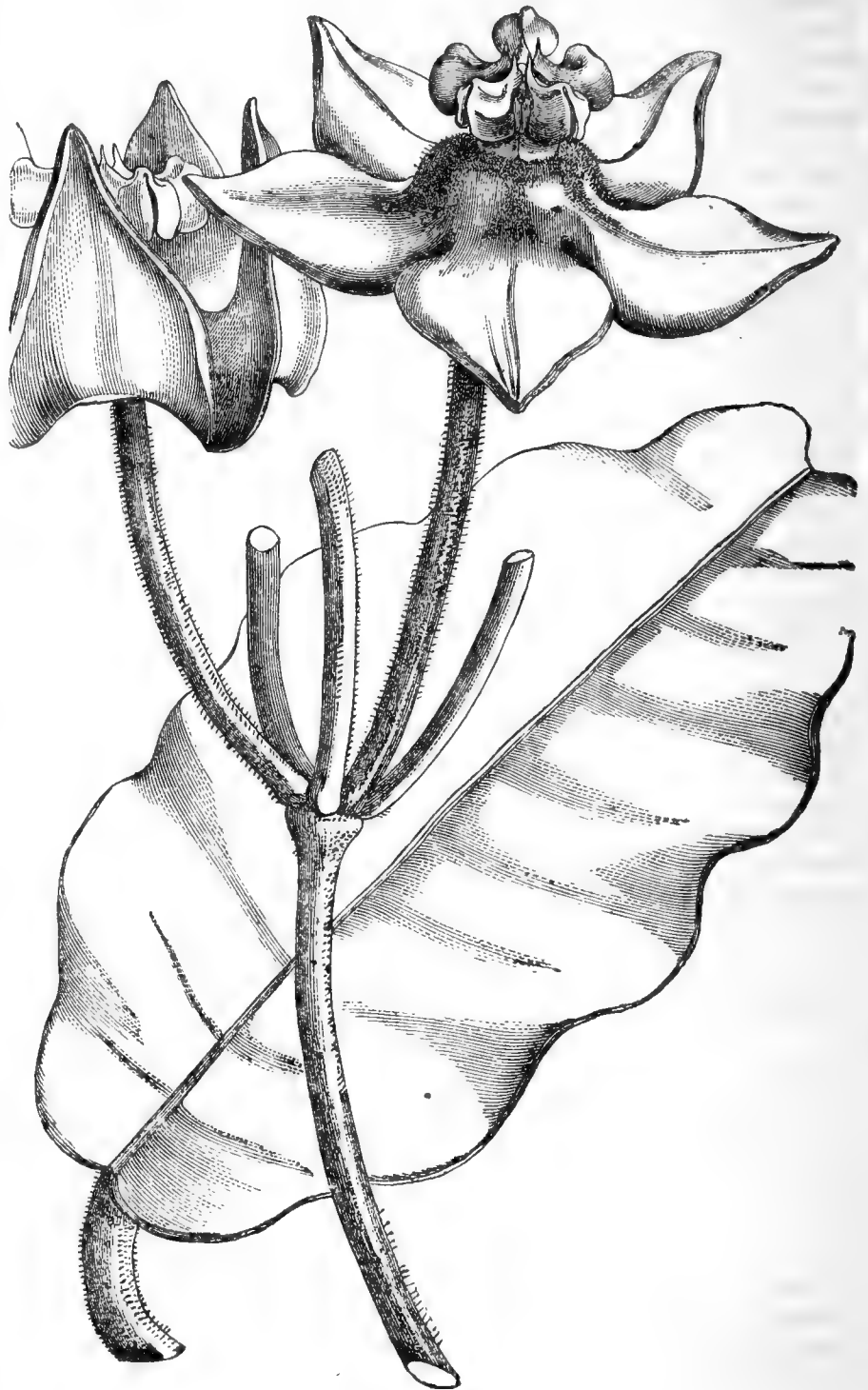
A fine shrub for places where there is plenty of room up the rafters, in the stove, or it may be trained round a trellis in a pot.—(*Horticultural Society's Journal*.)

PROTECTED TRELLISES FOR THE CULTIVATION OF TENDER FRUIT TREES. By George Fleming, C.H.M.S., Gardener to the Duke of Sutherland, F.H.S., at Trentham.

THE object Mr. H. B. Ker had in view when he published an account of his new method of growing the more delicate kinds of hardy fruits on trellises, and protecting them simply by means of a glass roof, was to bring to perfection those choice but more tender varieties of Peaches, Nectarines, Apricots, &c., which seldom ripen their fruit perfectly in our precarious climate; and the means by which he proposed to effect this had the additional recommendation of costing much less in the way of construction than ordinary walls, which are far from answering the desired end.

In Mr. Ker's experiments the top only was covered, and the sides and ends were left open, except during the prevalence of very cold winds, when a common net was hung in front of the trellis, in order to prevent to a certain degree the strong current of air passing between the glass and the blossoms. When I read the description I was delighted with the novelty and excellence of the idea; but at the same time it seemed incomplete so long as the sides and ends were open; and as several improvements have suggested themselves to me, I beg leave to forward a section and description of them, in order that others about to erect protective trellises may, if they please, take advantage of my experience.

The effect of the glass roof alone is chiefly useful in checking the upward radiation of the heat; but the slight difference of temperature, which is obtained either by night or day, is the means of creating a constant current of cold air between the branches and the glass; and in keen, frosty weather this is particularly severe and injurious. It is evident that something more is necessary than a simple netting being hung in front; and I think it will be generally admitted, that after going to the expense of fixing trellises, making glass sashes, preparing borders, and purchasing trees, it is worth while to go one step further, and make perfect trellised frames by closing up the apertures on all sides. Without this provision to husband the heat derived from the sun's rays, the trees are scarcely so well off during the day as they would be without the protection; for an increase of temperature is prevented by the constant current,



Hoya imperialis.

and, by the glass acting as a shade, the crop is retarded rather than forwarded.

Another objection against the original design is in the roots of the trees being outside the trellis, and exposed not only to the rain which falls directly upon the soil, but also to that which runs off the roof. This evil may, of course, be obviated by covering the border with tarpauling or some other material; but it is a much simpler arrangement to have the border made beneath the trellis, as the roots will then be in a temperature exactly proportioned to that in which the branches are growing, without the use of fermenting litter or other covering material.

I propose to close up the back and ends of the frame with cheap half-inch boarding, and to hang the board nearest the top upon hinges, so as to form a ventilator; in addition to which the sashes can be pushed down in very hot weather, and to keep the trees back after the wood is well ripened in autumn. In regard to the front, it would be better to enclose it with small glass sashes, fixed at an angle about twice as steep as the roof; this would afford additional training room, and insure the free access of light to every

part of the tree. These front sashes should also be on hinges, in order that they may be propped open to any extent, and thus a free circulation of air be secured, and increased or diminished at pleasure. The whole of the interior should be painted or coloured white, that the greatest possible quantity of light may be reflected amongst the foliage.

It may be urged that the entire closing of the frame, and the consequent introduction of ventilation, will add to the trouble of management; but the additional advantages gained by these arrangements are so obvious as to destroy at once any objections made against the trifling labour of opening and closing the small sashes, and the board at the back. I admire the original idea so much that I wish to see it worked out perfect and complete in all its parts, so that the plan may do away in a great measure with the necessity of constructing walls for the cultivation of these fruits, as they are much more expensive, and, as I have stated, do not answer the desired end. This induces me to urge the propriety of a slight additional outlay to that which was proposed in the original plan, and thus make it twice as serviceable. When completed, the Peach-frame, if I may so call it, will have every advantage possessed by a Peach-house, excepting artificial heat; and as the trees are not designed for forcing, the rays of the sun will supply all the heat that is required. If it be desired to take advantage of the warm, sunny days in spring, to start the trees somewhat earlier than they would naturally break, the roof should be provided with shutters, or a roll of canvass or matting, to assist in retaining the heat which has been accumulated during the day, and especially to exclude cold spring frosts. If canvass or light tarpauling be adopted, it may be made to work very easily by nailing one edge to the upper end of the lights, and the other to a light roller of a convenient length. A cord of sufficient strength must be nailed to the woodwork, near each of the upper corners of the canvass, and after passing under and returning over it, the ends of the two cords should be tied together at the back of the frame; by pulling these ends the piece of canvass or tarpauling will be drawn up and secured in much less time than I have taken to

describe it. The length of each roller may be from 18 to 28 feet, according to the weight of the material employed for covering.

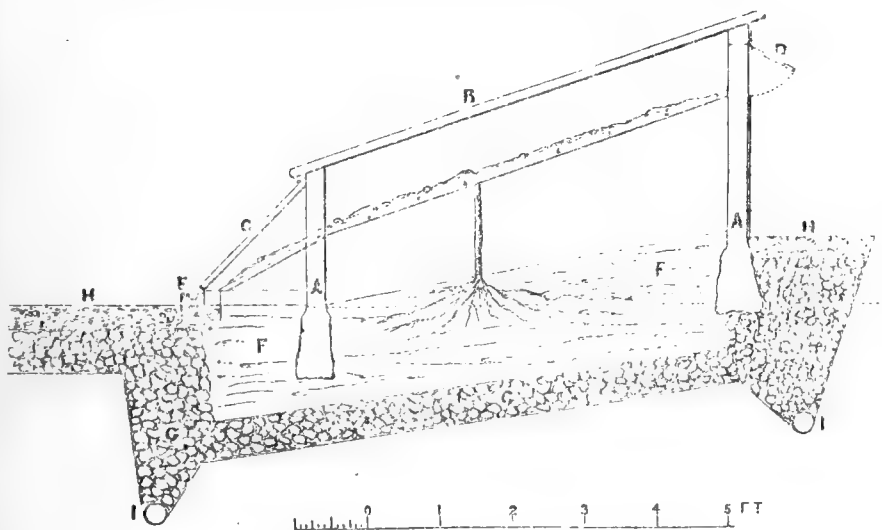
Another advantage gained by entirely closing the frames is, the facility which is thereby afforded for fumigating aphides, which are so troublesome to our Peaches on walls, and where the easiest method of getting rid of them is by means of the engine. These pests visit Peach-trees during the gardener's busiest season, and are in consequence very liable to be neglected, or, if the matter be attended to in proper time, the means employed are of so clumsy a description, and the operator, in his zeal, uses so much physical force, that the leaves are injured more by the engine than they are by the insects; in fact, the cure is worse than the disease.

It is true that one suggestion leads to another, *ad infinitum*, and the desire of making the protected trellis as perfect as possible leads us to the consideration that with all the improvements proposed above, it is still deficient in point of durability. Up to the present time it has been proposed to construct the whole of the framework of wood; but it is an established fact that, in the long run, it is very much cheaper to use iron instead of wood wherever it is within the influence of causes which hasten decay, and especially where it is placed in contact with the earth. The old adage, that "what is worth doing at all is worth doing well," is doubly true in this case, as the effects of the decay would just begin to show themselves, by the rickety state of the framework, about the time that the trees had arrived at their greatest perfection,—when they had covered the trellis with healthy, fruitful wood. To avoid such an annoying state of things, I would at least suggest the use of iron uprights, leaded into unhewn blocks of stone immediately beneath the surface of the soil; and those who would carry out this principle with still greater spirit would also employ rafters and wall-plates of iron. The uprights should have on each of the two sides a plain groove, about three-quarters of an inch wide and an inch deep, commencing at the ground line, and continuing within twelve inches of the top, which twelve inches should consist of a plain rabbet. The

groove is to receive the boards which are to close the back; and to retain them in their places, they must be secured by wedges. The rabbet is intended to form a frame for the topmost board, which is to be hung on hinges, to serve as a ventilator.

The accompanying sketch will show that I attach great importance to securing a free passage for the water, by laying a drain at back and front, by giving the border a good slope, and by keeping a considerable portion of it entirely above the ground level. To this end, also, a row of grooved bricks should be laid along the front, to receive the rain which falls on the roof, and convey it immediately to the drain, without allowing it the chance of penetrating into the border. For the sake of neatness as well as convenience, a good gravel path should be constructed both at back and front; and as there is ample space for the roots within the frame, this is perfectly practicable, and is also an advantage, inasmuch as the rubble used in filling the drains and forming the walks, in connection with the stratum beneath, prevents the indulgence of the natural tendency which the roots have of seeking their way into the soil either adjoining or beneath them. — (*Horticultural Society's Journal*.)

SECTION OF PROPOSED PLAN OF PROTECTED TRELLISES.



- A. Uprights with the bottoms unsawn.
- B. Top sash.
- C. Front sash.
- D. Ventilator at back on hinges.
- E. Row of Drain-bricks to convey water to gratings.
- F. Soil, 18 inches deep.
- G. Rubble for Drainage.
- H. Gravel.
- I. Drains.

STRAWBERRIES IN FOUR-INCH POTS.

CONSIDERING the many good articles on Strawberry culture which we read in mostly all journals, one might think that the question was fairly settled; and so it is with regard to out-door culture; for a deep, loamy soil, enriched with manure, and an annual top dressing in autumn for the benefit of the surface-roots, which the Strawberry is continually in the habit of producing, form the basis of a good Strawberry culture, and nobody doubts these points. But there are

different opinions with regard to the size of the pots in which they are to be fruited, some people saying that (24's) 8-inch pots ought to be used, others 32's, and a third set say that it has now been fully proved that 48's, or 4 inch pots, are the proper size, and that larger pots than these occupy needlessly so much space and trouble. This is all very good, but we should not be falling from one extreme into another; and to produce a good crop of Strawberries in

April and May requires but common sense in supplying the plants with the requisites for securing a good return.

In olden times gardeners used to pot runners in August, pinch off all the flowers the next year, and force them the second, taking care to give them 8-inch or 10-inch pots. These old-fashioned modes, thanks to the gardening press, have long been abandoned, and, within the course of eight or nine months from the time of the formation, we can make a runner yield as good a crop as we may wish for.

But which are the chief points we keep in view for getting the Strawberry into perfect order for next year's work? Why, to secure runners as early as possible, and, by pushing them on with all the speed of a high culture, to induce the plants to form thick, firm crowns as big as a nut, as Mr. Errington says, and elaborate as much sap within their cells as there is room, in order to make them push up strong flower-stems, and, consequently, a crop of numerous, good-sized berries.

One of our best Strawberry growers says, "It should be kept constantly in mind, that no treatment at the fruiting period will secure excellence, unless strict attention is paid now (June) to the preparation of the plant. The forcing period, in a great measure, only develops the stores which ought now to be laid up."

To attain this purpose, I lay them in large 60's (3-inch pots), for the size less is too small, and the young roots are too apt to get matted; for who can always find time to shift them just the very day they want it, and have them transferred into their fruiting-pots (6-inch) before July goes out? There is no better period all the year round than "to set them a-going" about the first days of August; they have then fully two months time to make their leaves and crowns, and by the latter end of September they look perfect pictures of health and vigour. Only turn one of your pots out at that time, and see if they are not perfectly pot-bound, and a thick net of innumerable rootlets running through the whole ball.

Granted, then, that an abundant crop is certain, if due attention has been paid to their wants, how is it that we have all been labouring in the dark, and that thus to prepare runners on the very best of principles is pronounced to be so much waste space and trouble, and ought to be ranked with the practice of bygone years? I ask this, because we were told in a contemporary, in June last, that results have been obtained such as give our crops no chance of rivalry, for double and triple the quantity of fruit has been gathered from 48's—numbers that were perfectly astonishing; for while most growers consider from twenty to thirty good-sized berries a very fair return in 36's, thinning out all the others, and assisting twice a week with weak liquid-manure, we are told that, under similar treatment, not less than fifty-six, and, in one instance, off the *Black Prince* seventy-nine berries were gathered, "many of them equal in size to those of the open ground, yielding a large, abundant crop of excellent fruit" in such thimbles as 4-inch pots. Surely there is a nut too hard to crack; for it appears to me a perfect riddle how it can be possible to gather fruit in such wonderful numbers from so small a compass as a 4-inch pot, while many considered from eighteen to twenty-four *Keen's Seedling*, and, perhaps, thirty *Black Prince*, everything one may reasonably expect.

As to watering these nut-shells in the bright days of March and May, sometimes scorchingly hot, when cold currents put a stop to a free ventilation, I think we had better slip over the question: we might as well engage an extra hand to attend to the two or three thousand pots that are annually forced in our great establishments. What advantages, therefore, are gained by changing the 32's for 48's, with an increase of watering, and a corresponding waste of time and expense, I am unable to see; for it is to the liquid-manure that the seventy-nine hungry berries have to look, the nourishment in the soil having been pretty well swallowed by roots and leaves a long time before; and such, we are told, are the advantages gained over practical Strawberry culture.

With every desire for progress, I, for one, shall continue my 6-inch pot-culture, for I cannot help following this sudden leap into the 48's with rather a suspicious eye.—FRAGARIA.

BEES SWARMING WITHOUT A QUEEN.

ALTHOUGH Mr. Wighton, in the last paragraph of his remarks on "Swarms without Queens," page 461, says, "I did not say your bees swarmed without a queen," yet the first sentence of his reply to a Kilkenny correspondent, page 335, legitimately bears that interpretation; and why not? An "Old Bee-master," page 371, says, "The theory of bees swarming without a queen is a novel one, which I must disbelieve till certain proof is afforded of its truth." Till within the last two years I also held this opinion, simply, however, through never having tested its accuracy; but if the experiments I have since made with this view are worth anything, I can endorse that theory no more. That bees will swarm and settle *permanently* without a queen is not asserted; but that they will swarm and settle *temporarily* is what is affirmed, and I cannot doubt it, even at the risk of being held an innovator not only by one "Old Bee-master," but by many. I must believe what my eyes have seen until I can be shown that my experiments are based on an erroneous principle. I have had, in my time, many hives which to-day would swarm and settle, and be hived too, which, on inspecting an hour or so after, I have found to contain not a single bee; to-morrow, an hour or so earlier, they would swarm again, and repeat the same manœuvre; next day, still somewhat earlier, swarm, settle, and in their hive remain. This sort of work is, to the owner, immensely troublesome, to the stock grievously impoverishing, and to the apiarian who holds the old, but fashionable belief that queens accompany every swarm or flight, most discouraging, for to him no remedy can appear. So much annoyance and perplexity did these abortive flights create me, that I began to doubt the common faith, and say, If queens were in the flights the first and second day, why, then, not settle on either day, as upon the third they did? I resolved, in short, to find the cause and cure if possible, and this is what I did.

When a first swarm was coming off I knelt close down beside the alighting-board, and, with a small wine-glass in my hand, waited with anxiety most intense the appearance of her Majesty. See, there she is; look how she runs about upon the board, all loath to leave; mark how the working bees urge her outwards; what a lovely thing she is! But a truce to admiration; catch her, and, placing the wine-glass over her, I drew her gently into my hand. Where are the bees? There, upon yonder tree, in a black cluster, hanging. But with the queen here the cluster hangs not long, but diminishes apace. I now return her Highness to her throne, and now from that black heap upon the tree the bees come crowding down. Next day I took my part of yesterday, and captured her as then. The bees clustered on a Plum-tree branch. I placed her Ladyship among them. Did they settle? Yes. For why? The queen was with them then. I have also captured the queen on the first day, and retained her until the bees began to return, then placed her among the remnant left, and these returned not.

Furthermore, I have remarked, while it has happened not unfrequently that I could not observe the queen, all such flights invariably have returned; and long before I ever even thought of these experiments I never saw a queen leave with a swarm, and yet that swarm returned.

In bee matters it holds good, as it does in our most important concerns, "to prove all things, and hold fast that which is right;" and the most timid operator, with a little coolness and quickness of sight and hand, may prove this matter for himself. *Par parenthesis*, this capturing of the queen may be turned to good account, over and above tending to prove a point. By so doing we may make the bees hive themselves, if I may so say. When the rush has terminated remove the parent hive, and in its place set an empty one; place the queen therein; the bees, on returning, finding her at home, take possession, and the thing is done. Any other inference deduced from these observations than this—that swarms, when accompanied by a queen all through their flight, and when they settle *never return*, must be strained and unnatural. Certainly, the fact mentioned by an "Old Bee-master" of swarms sometimes issuing twice the same day, and queens, from their inability to fly, being from the ground picked up, if it proves anything, proves more for than against me.

The cause of the old queen not leaving at all times when the bees swarm may proceed from her contented disposition.

She likes to let well alone. The idea of swarming does not originate with her. What inducement has she to leave? Has she not a well-stored and furnished house? Is she not surrounded by a numerous and industrious progeny? while, within these chambers round about her, are there not thousands of her offspring waiting the auspicious moment that shall usher them into being? Therefore, although the swarming signal may echo through the hive, and she proceed even to the gates of her pavilion, a peep at the world without does not encourage her to leave her comfortable world within; and, unless the mighty host by which she is surrounded shall succeed in urging her onwards and upwards, or the apiarian makes her captive, she will return to her dominions. This feat, however, once accomplished by the "Bee-master," whether he does it with a view of seeking for evidence on the point at issue or not, will yield him a sure preventive against all abortive flights.—D. G. M'LELLAN, *Westfield Cottage, Ratherglen, near Glasgow.*

FRUIT-TREES IN ORCHARD-HOUSES.

THERE seems, at this moment, to be an active discussion going on in reference to the success, or the contrary, of Mr. Rivers' plan of growing Peaches, Nectarines, &c., in pots in orchard-houses. The country is undoubtedly much indebted to him for the suggestion, and I feel considerable reluctance in saying anything adverse to the plan, or unnecessarily to damp the sanguine expectations of persons who are erecting, or about to erect, those structures. I have myself had one of them for three years past, and I will give the result of my experience. I have derived much pleasure from, and have devoted considerable attention to, my orchard-house, so that it has not suffered from neglect; but it may be said that I am only an amateur, and ignorant and inexperienced, and, therefore, incompetent to judge in the matter.

An objection presents itself *in limine* to the plan, that is, that the plants must be cribbed and confined in a pot, and must, therefore, partake of that dwarfishness and want of strength which are the invariable concomitants.

The past summer on two *Apricots*—the *Peach Apricot* and *Moor Park*—I have had nothing. On one *Peach* I have had a dozen; on a second, five; on a third, three; on a fourth, five; on a fifth, two. On one *Nectarine*, five; on another, two; and on a third, none. This fruit, it must be admitted, was of excellent flavour; but I had not the same number of trees in my house which I see some gentlemen have put in their orchard-houses. I had only ten trees in a house twenty-one feet by twelve; each tree in a pot of thirteen, fourteen, or fifteen inches diameter, and to an abstinence from crowding I attribute the excellent flavour of the fruit. The above result is not, I conceive, very flattering.

In an old lean-to house, lowered as much as possible to adapt it for the purpose of an orchard-house, I caused to be built against the back wall, and upon the earth, two brick inclosures, each about four feet diameter, and four feet in height, for the purpose of getting nearer to the glass, and to serve as a huge pot. In these I planted, three years ago, two *Noblesse Peach*-trees, which have thriven admirably, and on these trees, last summer, I had four dozen fine Peaches of excellent flavour, and far surpassing in number all the fruit on all the trees in pots in both houses.

If ignorance and inexperience are alleged in reference to the pot-trees, the same ignorance and inexperience produced a different result in the case of the trees against the wall grown as above, thus going far to prove its superiority in getting fruit. If, therefore, utility and the production of fruit are the objects aimed at, I fear that the pot-culture must succumb in the contest. I regret to be obliged to say so; but I fear it is too true. Still, it is a very valuable and very pretty mode of growing fruit. However, with the experience I have gained, I shall vary the mode of using my orchard-house. I shall plant *Peach*-trees in the front in the natural ground, train them under the glass half the way up, leaving the upper half of the glass of the roof to admit the sun and light to other trees against the wall at the back of the house. I feel persuaded that I shall succeed by this plan, and I hope that Mr. Rivers will forgive my want of faith in his plan as a mode of growing the largest quantity of fruit, which is my

object. I shall use the other house still as an orchard-house.

Our climate in this part of Devon enables us to grow Fig-trees to a large size as standards, and perfectly ripening their fruit. Apples and Pears succeed remarkably well in the gardens of this town (Barnstaple). An example of prodigious bearing, in the case of a *Pear-tree* (Windsor), occurred in the summer of 1855. The branches of the tree commenced at seven feet from the ground, where the tree is about a foot in diameter. It has been planted thirty years, and in the summer referred to it produced 5,500 Pears. So great was the weight, that, notwithstanding it was supported by numerous strong props, the tree was split in two in the bole, beginning where the branches spring off, and extending for two feet down the stem, leaving a yawning chasm in which a man's hand could be placed. The split portions of the tree were afterwards drawn together by strong iron bolts. Perhaps this is not unusual; but to me it appeared extraordinary.—DEVONIENSIS.

ON FEEDING BEES.

WE mentioned, in a former article, that the habits of the honey bee were originally more suitable to a warm climate, as it is always gregarious and productive without interruption. Wild bees all die, except the queens, at the end of the season, and these are torpid in winter, and, of course, require no food. Like hive bees, however, they store up honey and pollen; but, in both cases, it is only food for present use, and not for winter. If apiarians were to keep this and other habits of these insects in mind, they would see less reason to complain of light hives, and of their bees dying in winter. Indeed, it is more surprising they so often store up so much, and survive four or five months without being able to obtain any fresh supply, especially of pollen, which turns mouldy whenever the bees get close together, and leave it exposed in the hives. This is seldom thought of, and yet it is often the cause of bees dying, and leaving a good stock of honey. At present we pass over pollen, which is food for the larva, to notice that of the bees. Our bad seasons, and the instinct of the insects to go off in small colonies, occasion their being often short of food. Strong hives, of course, require none, and the pollen is kept in good condition by the warmth of the bees.

About the middle of October, in warm days, is the best time to feed hives short of 14 or 17 lbs. of honey, exclusive of the hives and boards, allowing a little for pollen and brood, especially in old stocks. We have kept bees on much less, but they required feeding in spring; and, when the weather was bad, they became weak, and those which survived were not so good as an early swarm. There are various receipts for making food for bees, but none is equal to honey—1 lb. is as good as 2 lbs of sugared mixtures; and when it can be bought at 10d. or 1s. per lb., it is, perhaps, as cheap. Candied sugar is not fit for hungry bees; it is like hard biscuits to those who have bad teeth; it must be softened or melted before they can sip the fluid with their proboscis. When the food is first offered it is good to drop a little at the entrances of the hives, and rap upon them to arouse the inmates, who will soon find out the chief supply. We have often fed bees with about 1 lb. of brown sugar, three-quarters of a pint of ale, and a teaspoonful of salt, boiled for a few minutes; but, perhaps, Mr. Golding's receipt is better:—One pound of sugar, quarter of a pound of honey, one pint of ale, and a teaspoonful of salt, boiled a minute, and, as the syrup cools, add half a glass of wine, and a tablespoonful of rum.

Some novel hives have ingenious feeding-pans, which are very good in bad weather; but, in such cases, perhaps Dr. Dunbar's is the best for common hives. Our excellent apiarian, Dr. Bevan, gives a good drawing of it in his "Honey Bee." It is a wooden dish with grooves in the bottom, and a funnel high enough to keep in the food placed in a hole on the top of the hive, through which the bees ascend into the dish, covered with an empty hive. But in good weather, and when no strange bees are kept near, we prefer feeding in front of the hives, closing the doors of the strong ones, except a little opening for air. The food is placed in plates, with a few sprays of sticks or litter for the

bees to rest upon, or, what is better, pieces of empty combs, which are, after all, the best feeding-pans. The morning or middle of warm days is the best time to place fresh food.

Cottagers often feed with success by merely placing the light hive upon an *eke*, to afford room for a plate of food below, taking care to close the entrance, to keep out strange bees. But whatever plan is adopted, the supply should be continued, and not given by dribblets; for, if possible, bees should not be disturbed by feeding in winter.—J. WIGHTON.

GROUPING TREES AND SHRUBS.

THE autumnal tints of the foliage last year were richer than I ever remember seeing them. The mild weather, also, prolonged their beauty and magnificence to a much later period, giving us country-people ample time to judge of the effects of judicious grouping over a mixed medley of confusion.

As this glorious season has again brought us round to the time that even the rustic and clodhopper can hardly pass through the lanes without admiring *dying leaves*. I say glorious season, as I believe few can remember seeing the earth, both last year and this, so loaded with the useful to animal life. Noble single trees, such as the Oak, Cedar of Lebanon, Elm, &c., standing boldly out as a foreground to masses of other descriptions, have a truly noble effect; but the mixed mode, without design either for use or ornament, is *miserable* and contemptible.

And now, while the trees are in all their glory, let me give the chance to your young writers of a discussion on this interesting subject. With this view, I inclose a sketch, and will just point out a little of what is to be seen that can be done with common every-day things.

To explain matters more clearly, I have marked the clumps into divisions, and numbered them. Say, therefore, No. 1

is planted with Tulip-trees, or scarlet or other varieties of Chestnuts or Limes, or any other variety of trees growing about the same height, that carries a similar cream-coloured or yellow autumnal tint. *Of course, whatever one is chosen, keep to it—let there be no mixing.* The common Hornbeam ought not to be forgotten in this class, as it retains the masses of seed-vessels long after the foliage has disappeared, giving it the appearance of being covered with Hops, and as late as March forming a beautiful and pleasing contrast to the dark and sombre foliage of varieties of the Conifer tribe.

No. 2. Scotch Firs, or *Pinus Austriaca*, or *P. insignis*, or *P. Pindrow*, or *P. excelsa*, or *P. cembra*, &c.

No. 3. Spruce Firs, or *Abies Morinda*, &c.

No. 4. Planes, or English Elm, &c.

No. 5. Larches.

No. 6. Cedars of Lebanon.

No. 7. American Scarlet Oak, or Purple Beech, &c.

No. 8. English Oak.

No. 9. Silver Fir, *Abies Douglasii*, or *A. Nordmanniana*, &c.

No. 10. Cut-leaved Weeping Silver Birch, &c.

No. 11. *Cedrus deodara*.

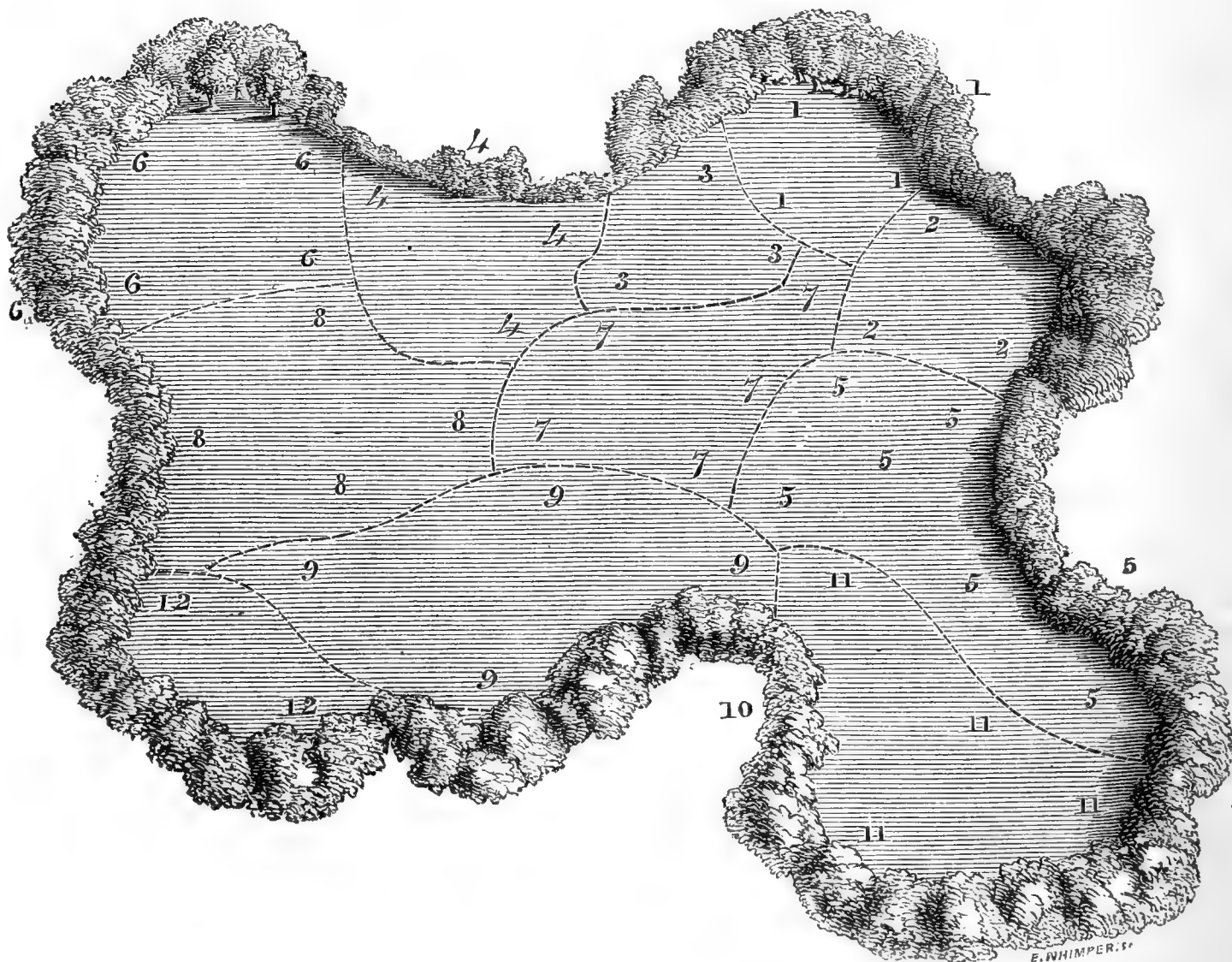
No. 12. Evergreen Oak.

Again, suppose Nos. 1 and 2 were planted with Larch; 3 and 4, Spruce Firs; 5, Weeping Birch; 6, Cedar of Lebanon; 7 and 8, Scarlet Oak; 9, *Pinus Douglasii*; 10, *Virgelia lutea*; 11, *Cedrus deodara*; and 12, fine Purple Beech.

Again, 1 and 2, *Cedrus deodara*; 3, 4, and 5, Larch; 6, Scotch Firs; 7, 8, and 9, Scarlet or English Oak; 10, Tulip-tree; 11, Cedar of Lebanon; 12, Silver Firs.

Any of these would have a good effect; but, of course, this will depend on the size of the clumps, and, therefore, must be ruled by circumstances.

If the ground outline is not kept in grass, but required as a cover for game, I should plant a deep, irregular margin on the outside with such plants as appear suitable and harmo-



nising with the trees. For instance, *Juniperus sabina*, or other creeping Junipers, would do for the Tulip-trees. In No. 1, Heath, Broom, and Furze, in front of the Scotch Firs, No. 2. St. John's-wort, Daphnes, &c., in front of the Larch, No. 5. Cotoneasters, or Savin, &c., in front of the *Cedrus deodara*, No. 11. Cistus, with their varieties of light foliage, in front of the Evergreen Oaks, No. 12. Alexandrian Laurels, or Butcher's Broom, outside the English Oak, No. 8. Periwinkle, with its variegated varieties, in front of the Cedars of Lebanon, No. 6. Within the margin I would plant as underwood, *Berberis aquifolia*, Box, Green Holly, common Laurel, Spurge Laurel, &c. In the margins of the Periwinkle, &c., I should have a profusion of common Primroses, Crocuses, winter Aconites, Snowdrops, Dog-tooth Violets, and single Russian Violets, &c. American plants, where heath-mould is to be got easily for them, form a good feature in this style of planting.

So much for the trees of large growth. Let us now see what can be done with the intermediates between the above and low-growing shrubs. Suppose No. 1 is planted with deciduous Cypresses, which vie in summer with the gigantic Ferns of New Zealand. No. 2. *Cupressus Lambertiana*, *C. torulosa*, or Red Cedars, &c. 3. *Pinus Pinsapo*. 4. *Ailanthus glandulosa*. 5. *Liquidambar*. 6. *Araucaria imbricata*. 7. *Virgelia lutea*. 8. Hemlock Spruce. 9. Common Yew or Green Holly. 10. *Catalpa syriaca*. 11. *Pinus insignis*. 12. *Salisburia adiantifolia*. Keeping to similar underwood, only a few Lilacs, Laburnums, Thorns, &c., might be introduced with good effect in the foreground.

Take, again, for No. 1, the Laurestinus, intermixed with the deciduous varieties of *Euonymus*.

No. 2. *Aucuba Japonica*, intermingled with the single Guelder Rose, whose berries are beautifully transparent, and hang till June, as the birds do not touch them.

No. 3. Swedish and Irish Junipers.

No. 4. Common Laurel, with Mountain Ash above them.

No. 5. Phillyreas.

No. 6. Variegated Hollies.

No. 7. *Magnolia Thompsoniana*, *Saulangeana*, &c.

No. 8. Portugal Laurels, intermixed with the Snowy Mespilus.

No. 9. Common Yew, intermixed with Laburnums.

No. 10. Arbutus, or Gold-striped Yew.

No. 11. *Berberis aquifolia*, intermixed with *Ribes sanguinea*, Laburnum, Thorns, &c.

No. 12. *Magnolia glauca*, &c.

Roses would make a good addition if intermixed in the margins amongst the Periwinkles, &c.

The above is enough to start the subject; but allow me to conclude with the description of a few clumps of trees, &c., that stand out in bold relief in the grounds here.

Deservedly first is a magnificent group of six *Silver Firs*, a long way above 100 feet in height, varying from 8 to 12 feet in circumference at 3 feet from the ground, and growing within a circumference of 60 feet. It appears astonishing to me where they have found food. What will the advocates for thin planting say to this? There are other two groups of *Silver Firs* that deserve mentioning, since one tree in one of these groups is 13 feet 6 inches at 3 feet from the ground, and judging by those that I have measured when cut down, it reaches at least 120 feet in height. Both of these clumps have evergreen Oaks planted round them, which give a stamp of Rembrandt style—something more than water-colours. They appear, also, so happily blended together, that everybody seeing them admires them.

I find the Silver Fir the best tree for filling up neglected ornamental plantations that I am acquainted with, as no other tree that I have observed accommodates itself so well under others.

Also, there are here many noble *Cedars of Lebanon*, two of which measure 17 feet at 3 feet from the ground, and one at least 100 feet in height, and splendidly furnished. A Yew, 3 feet from the ground, is 13 feet, and 6 feet from the ground 22 feet in circumference. Tulip-trees 10 feet, with the habit of noble Oaks, from 90 to 100 feet in height. *Spruce Firs* 10 feet in circumference, and forming most magnificent weeping pillars 90 to 100 feet in height. Many *Larches* 10 and 12 feet in circumference, one of which measures 20 feet at 1 foot from the ground. An avenue of these leading to a pillar erected by Lady Cobham to the

memory of her Lord, in 1749, are evidently some of the original Larches, and apparently have been grown in pots, as the roots are quite coiled round, and make not bad substitutes for seats; also showing that it is possible for potted trees to become noble timber ones.

Oak, 26 feet; but our monarch of the wood fell in May, 1834. I had been to look at it for more than the one hundred and first time on the Thursday, when, apparently, its life might have been insured for centuries, as the leaves were coming out beautifully; but the old adage, "whilst we are in the midst of life we are in death," was fully verified in this case; for, on entering the park about a mile from where it was standing on the following Saturday evening, the air at the time scarcely stirring the leaves, I was roused out of my reverie by a noise as if a thousand ordinary trees had fallen. That monarch Oak had fallen. It contained about 900 hundred feet of timber, and realised a large sum, having been very well known as the "Sweep Oak." Had it occurred in the ancient times of the Druids (or, perhaps, *I need not go so far back*), a good handle could have been made by it, as its immediate neighbours for many centuries had fallen by the axe the same week.

I have thus far entered into the details of this fine old tree, with the view of showing what might have been done with Whittlewood Forest in the hands of practical men, as the greatest part of it is equally favourable for the growth of Oak.

Though digressing from my subject, permit me to correct an error I fell into in the description of royal forests, which appeared in the pages of a contemporary in March, 1853. For "*Auctioneer's mark*" read "*Commissioner's*," for the trees are still standing, without being offered for sale, and the greater part of the numbers are defaced. The young maiden Oak they offered, of course, *being public property could not be done in the usual way*; but it must be offered by tender in eleven large lots, the bad mixed with the good, and, therefore, unsuitable for the dealers in good timber. The consequence was, four dealers in a small village adjoining Whittlewood became the purchasers, at their own price, of nine lots out of ten that were sold. One of the buyers I saw a few days afterwards, and he was highly delighted with his bargains, and expressed himself as sorry that he had purchased so largely at a sale that came off a few days before, where he had to contend with dealers brought together in consequence of quality being separated from rubbish, which rubbish only dealers on the spot could turn to account. *Beech* here are 17 feet in circumference. Noble *Scotch Firs* 12 feet, varying from 70 to 90 feet in height. *Planes* 12 and 13 feet, and about 80 feet in height. These trees appear to have been planted about the same time as the Larches, and could not have been seriously injured in 1809, 1813, and 1814, as stated by Mr. Loudon and others. Here they assume the habit of majestic Elms, while, at the Duke of Grafton's seat, not far distant, is a magnificent specimen, sweeping the lawn with its long, pendent branches, forming the most attractive ornament in the grounds.

I am afraid that I have already made this too lengthy for your pages; but permit me to add a few measurements of young trees recently planted, and small at the time.

Silver Fir, planted in 1839, 33 feet in height, 3 feet in circumference 1 foot from the ground.

Abies Douglasii, planted in 1840, 25 feet in height, two feet 9 inches in circumference 1 foot from the ground.

Cedrus Lebanon, 24 feet in height, 2 feet 4 inches in circumference 1 foot from the ground.

Pinus excelsa, 25 feet in height, 2 feet 10 inches in circumference 1 foot from the ground.

P. Pinsapo, 20 feet in height.

P. Morinda, 20 feet in height.

P. Smithii, 20 feet in height.

Cedrus deodara, planted in 1843, 22 feet in height, 2 feet 2 inches in circumference 1 foot from the ground.

Larch, planted in 1841, 40 feet in height, 3 feet 6 inches in circumference 1 foot from the ground.

Spruce Firs, 30 feet in height.

Proving there is nothing like Larch for quick growth after all.—D. FERGUSON, *Stowe, Buckingham*.

SUPER PHOSPHATE OF LIME AS A GARDEN MANURE.

FROM observations in THE COTTAGE GARDENER on the use of Super-phosphate of Lime, I have been induced to try it under the following circumstances:—

My garden, by no means an old one, has for the last five years produced everything of the Cabbage tribe, particularly Cauliflowers, with what some gardeners term "finger-and-toe" roots, or, in other words, clubbed roots. I therefore this year planted two rows of Cauliflowers, one of them with rotten horse-manure and a small quantity of the super-phosphate, and the other entirely with the latter. In the first row there was a little clubbing, but nothing to prevent growth; but the latter, having used more of the super-phosphate, was entirely clear, and the Cauliflowers in both were the best I have had for several years.

I have used it for Peas, Beans, Spinach, and Onions with good effect; indeed, the Onions were allowed to be the best in this neighbourhood.

For pot Roses and Chrysanthemums nothing can excel it.—A SUBSCRIBER FROM THE FIRST.

QUERIES AND ANSWERS.

UNITING STOCKS OF BEES.

"Having a swarm of bees of this year which appears too weak to stand the winter, I purpose buying an old stock-hive. Ought the weak swarm to be united to this hive, as directed in "Bee-keeping for the Many?" I have a spare attic, about thirty feet from the ground, in which the hives might be kept, as a bee-keeper tells me that it is best, if possible, to devote a room to them, where they will be free from vermin, damp, and wind, and easily got at. Would you recommend this? or is my attic too high for the purpose? It has a south aspect.

"The hive which I am about to purchase is one of the old sort. Should I keep this merely as a stock-hive, and get a swarm from it into one of better construction? or how should I deal with it? My present hive is one of the same description.—A. N."

[It is too late in the year to attempt the union of stocks. This should be done seldom later than the middle of September in fine weather. "A. N." purposes the purchase of an old stock; but the selection ought to be one of sufficient health and strength to stand through the winter without the necessity of any junction of hives. It must be removed to its intended position in another month, and remain till swarming time without disturbance. A spare room or dry outhouse will do very well, with an aperture through the wall as an exit for the bees, taking care that these cannot get into the room itself; but thirty feet from the ground is too high an elevation, and many bees would be lost; besides that, in the swarming time they might fly to an inconvenient distance, or be lost altogether. Perhaps "A. N." might preserve his weak stock by abundant feeding.]

CULTURE OF TRITOMA UVARIA AND SISYRINCHIUM GRANDIFLORUM.

"A Subscriber to THE COTTAGE GARDENER, having lately received roots of *Tritoma uvaria* and *Sisyrinchium grandiflorum*, would feel greatly obliged by being informed when they should be planted, and how treated."

[They should be planted at once. *Tritoma uvaria* is the hardiest plant we have from the Cape of Good Hope. It is very seldom destroyed by frost; but young suckers of it, such as your plant, should have the same protection as young Artichokes in the kitchen-garden; that is, some people take great pains with them about London, and mulch them very heavily to keep out the frost; while, on the other side of the Grampian range, very few people think the frost does any harm to Artichokes. It may not be quite so with *Tritomas*; but cottagers give "slips" of them to their friends, who never think of mulching them. The *Tritomas* are the finest things we have late in the autumn, and we ought to have them by the hundred instead of by the dozen. *Sisyrinchium*

grandiflorum, as well as the *Tritomas*, does better at first, or while young, in a bed of half peat and half sandy loam; but in a few years they will be strong enough to do in any soil which would grow Carrots or Barley. Neither of them will be so safe in pots through the winter as in the free ground, with a little coal-ashes over them till March or April.]

DELPHINIUM FORMOSUM.

"I am curious about the history of *Delphinium formosum*, which I see mentioned in a recent number. I have had *Delphinium Hendersonii* for two years, and find it bad to keep through the winter, as it dies if left in the ground, and its growth is stunted if taken up; besides, it does not come true from seed.

"There was, in a nursery garden near here, this autumn a most magnificent bed of *Delphinium formosum*. It consisted of more than 200 seedlings, sown in a little heat last April, and planted out in June. I looked them carefully over, and there was only one, a purple one, which was not true to the colour of the *Hendersonii*, and they had a more compact spike and larger flower. They were ripening seeds abundantly. If those who are supposed to have raised it are honest about it I suppose it cannot be a species; but no species could have come truer from seed; and, if such is its regular habit, it will be the finest addition to our bedding-plants we have had for some time."

[The history of *Delphinium formosum* we gave last month only. It was raised by Mr. Deering, near Norwich, and is the finest of all Larkspurs, as we have said on three occasions this summer. It should not be touched for the first twelve months after buying it, as we answered two weeks ago. It seeds tolerably well, and it comes true from seeds; but that proves nothing to those who can see any difference between species and variety. Your *Hendersonii* can hardly be true. We never saw it in seed, and it is as hardy as any of them as far as we know.]

SIX STOVE PLANTS.—FORMING AN OVAL BED.

"I want half a dozen stove plants, fast growers, profuse bloomers during winter, if you will kindly send me the names of six. At the same time, could you give me some directions for cutting an oval bed?—A SUBSCRIBER."

[These six plants will suit you:—*Poinsettia pulcherrima*, crimson; *Euphorbia Jacquiniflora*, crimson; *Justicia flavicomma*, yellow; *Eranthemum pulchellum varicosum*, blue; *Begonia fuchsoides*, scarlet; *Begonia muricata*, pink.

To make a gardener's oval bed:—Decide upon its greatest length; place a line to represent thus its long diameter. Bisect it in the middle with the transverse diameter, placing one half of it on one side, and the other half on the other side of the long diameter, and at right angles with it. Then take half the length of the transverse diameter, and divide it into three parts. Take one of these parts, and at that length from each end of the long diameter place a stick firmly in the ground. Place a stick at the same distance from each end of the short diameter. Then place a string round the two pins on the long diameter, and the pin on one side of the short diameter, so loosely that when you strain it with a pin in your hand, it will reach the extreme end of the diameter. Take the line round with this strain on it, and you will describe one side of the oval; move the line to the pin on the other side of the transverse diameter, and you will describe the other side, and the oval will be complete. Where mere length is given, divide the length of the diameter into three parts. Make the two outer parts the centre of two circles, which will thus form the ends of your oval. The places where these circles cross each other will be the centres from which to finish the oval on each side. There are many other modes, but these are simple.]

MELONS IN POTS.

"My late gardener was very unsuccessful in the cultivation of Melons. I shall be thankful for an opinion as to the following plan:—

"To fill earthen pots, fifteen inches wide by thirteen

inches deep, with soil composed of marl, loam, clay, and light earth, well incorporated together, with holes by the sides and at the bottom of each pot, and a proper drainage; then to transplant one young Melon plant into each pot, on well-ripened, fermenting dung, with a proper quantity of light earth around and at the bottom of each pot. I should then be able to take up each pot, change the fermenting dung, and renew the heat as often as requisite, without much disturbance to the Melons in the several pots. I should also be able to apply a proper quantity of water around each pot, so as not to damp off any of the Melon plants.—K. B. G."

[If you could manage, the plan would answer well. We think Melons are never better than when grown in pots. We doubt the feasibility of moving the pots, and turning and renewing the dung, without very great care and trouble. Could you not contrive to place your pots on a platform of boards, &c., so that they would not need to be moved, and supply your dung-heat from a chamber below? Had you hot water you would have no trouble. We like nice fibry loam for such pot-culture, and manure-waterings when the fruit is swelling, and a dry atmosphere when they are ripening. If you had a platform you could easily contrive to keep the roots moist enough when, at the ripening period, the atmosphere was as dry as possible.]

TO CORRESPONDENTS.

PLANTING FRUIT-TREES (James Shield).—Plant the narrowest part adjoining the house with Gooseberry and Currant-trees six feet apart, and the rest with dwarf standard Pears and Apples twelve feet apart. A row of Raspberries may be planted along the side next to the brook. Lay the whole down with grass, inclose it with a galvanized iron trellis, and then it will make an excellent run for your fowls.

STONE FRUIT FROM SEED (B.).—When raised from seed the progeny is rarely as good as the parent, and never exactly like it. Out of hundreds of seedlings raised by careful cross-breeders an improved variety rarely is obtained.

THRIPS ON CUCUMBERS (J. Wilson).—Dust the plants with a mixture of flowers of sulphur and Scotch snuff. Whether the plants will shoot afresh if cut back depends upon their vigour. Ventilation and moisture in the air would prevent the thrips appearing.

NAMES OF PLANTS (E. Johnson).—No. 1 appears to be a small frond taken from a plant of *Lastræa dilatata*. No. 2 appears to be the *Lastræa spinulosa*. There are five varieties of the *Scolopendrium vulgare*, namely, 1. *Polyschides*. 2. *Crispum*. 3. *Lobatum*. 4. *Multifidum*. 5. *Luceratum*. (Lucius Hutton).—Your Fern is *Lastræa dilatata*, and the poor soil on high ground accounts for its fruiting in so small a state. The Lycopod with the stem creeping is the common Club Moss, *Lycopodium clavatum*, and the other is called the Fir Club Moss, *Lycopodium selago*. (A Cottage Gardener).—Your plant is correct, the *Gaura Lindheimeri*, and we have the same good opinion of it as the writer who speaks of it at page 26, Vol. IX. It is a very interesting plant for the flower-borders in any form. A broad stage inside your pit, about a foot from the glass, upon which to place the Verbenas, &c., would be an improvement, with plenty of air in all favourable weather, and well secured from frosts at night. *Too much care is better than too little.*

THE POULTRY CHRONICLE.

POULTRY SHOWS.

BIRMINGHAM. December 2nd, 3rd, 4th, and 5th. Sec., J. Morgan, jun., Esq. Entries close November 1st.

ESSEX. At Colchester, 8th, 9th, and 10th of January, 1857. Secs., G. E. Attwood, and W. A. Warwick.

GLOUCESTERSHIRE. Nov. 26th and 27th. Sec., E. Trinder, Esq., Cirencester. Entries close Nov. 1st.

NOTTINGHAMSHIRE. At Southwell, December 17th and 18th, 1856. Sec., Richard Hawksley, jun. Entries close November 19th.

NOTTINGHAM CENTRAL POULTRY ASSOCIATION. January 13, 14, and 15. Hon. Sec. Frank Bottom. Secretary to the Canary Department, Jno. Hetherington, jun., Sneinton.

PRESTON AND NORTH LANCASHIRE. January 21st and 22nd, 1857. Sec., Ralph Leigh, Esq., 125, Church Street, Preston. Entries close December 13th.

N.B.—Secretaries will oblige us by sending early copies of their lists.

POULTRY SHOWS, PAST AND PRESENT.

No doubt, at some future time, poultry will have its chronicle like anything else. It will then be shown how prizes increased, while the general value of the competing birds decreased, and clever inferences will be drawn therefrom.

It may at first appear an anomaly, that when birds made easily from fifteen to thirty guineas the pen, competitors were well content with a Silver Medal, value two guineas, for the first prize; while, now that such prices form the exception, the first prize is nothing less than a Silver Cup, often valued at ten pounds. The truth is, the high prices made some time since were not beneficial to the poultry pursuit. It was believed that there was no prospect of success unless with an outlay amounting to half a small income. This kept back the best exhibitors, while the Shows were filled with speculation pens, sent only for the purpose of sale. Every contrivance was resorted to to keep up the price, or to take advantage of it while it lasted. When prices diminished most of these exhibitors withdrew, and hence a change and apparent falling off; but we are sure we are right when we say, that at no time has the poultry pursuit been in so healthy or encouraging a state as now. With the former class of exhibitors the possession of a Silver Cup was of little moment, as the prize was not sought for itself, but was intended to help a sale. Now, we have exhibitors chosen from the nobility and gentry, who show for the prize itself, and the honour of gaining it. Now, too, the number of pens to be shown by each is restricted, whereas we can all recollect the time when one person showed fifty pens at Birmingham, and at Norwich one man showed fourteen pens of Dorkings in one class. It was not at all uncommon to see ten or twelve pens "all of a row," and all the property of one person. This was discouraging to many who are now among our best exhibitors, as they felt they showed at a disadvantage, and they did not feel disposed to give forty or fifty pounds for the chance of winning.

We should like to know, but we do not, how many Silver Cups are advertised during the present season for competition. We have seen some sideboards that made a great display of silver, all won by a few fowls, and we have been delighted with the real pleasure afforded to worthy people by their success. For Poultry Shows to be lasting they must improve every year, and we think they have done so. Nothing is more important than a class of good exhibitors, and they are now numerous.

The sales are freely made when the prices are moderate, a certain attendance may be depended upon, pens may be hired at a fixed sum, the localities fit for Exhibitions are well understood, and everything may be calculated with certainty. Another element may be depended upon, viz., subscriptions. We do not believe that small Exhibitions will increase; but we think the time is not far distant when every Agricultural Society will have its poultry; we had almost said, will be obliged, by the pressure from without, to add it to the programme. But another argument in favour of the continuation of Shows, even apart from agriculture, will be found in the fact, that it opens a pleasing and harmlessly-exciting pursuit to many classes who may legitimately ask for such change. Ladies, clergymen, and many gentlemen have a right to such a pursuit, and will always form a valuable class. The approach of the principal Shows, and the value of the prizes offered for competition, led us to the train of thought which we have here published.

THE PLATE PRIZES AT POULTRY SHOWS.

I AM somewhat tardy in infringing on the valuable space allotted to poultry in your instructive periodical, but trust my present suggestion may find some little corner or other appropriated to it, as it seems a subject that continuously becomes more and more urgent. Still more confidently do I hope for this concession, as I present the earnest plea of most of the ladies themselves among our poultry amateurs. To such, I am fully sure I need not insist, we are all of us most deeply indebted, not only for the continued welfare and general success of our feathered favourites at home, but likewise for their personal support and sanction of our various Poultry Exhibitions; the latter feature most particularly, as we all know, adding very significantly both to the pecuniary success, vitality, and general importance of every such meeting. Without farther prelude, then, the suggestion I wish to offer is simply this:—Many of the "fair sex" complain that Silver "Drinking" Cups may be very appropriate as Plate Prizes for gentlemen, but are at the

best hardly the coveted premium to boast of when won by a lady. That a sideboard of "Silver Cups" is intrinsically valuable is at once allowed; but they are not of so much utility as many more feminine requirements, which certainly might be procured with equal ease at the like original expense and trouble. To some such of our fair competitors a silver fish-knife, pair of salts, or various little items for the tea-board, would be far more acceptable, according to individual tastes or household requirements.

Arrangements might, by every committee, be effected with some respectable silversmith or other in most towns, to grant to each successful competitor an after-selection from his stock of plate generally, in strict accordance with the value of the prize, or prizes, previously awarded. By this very simple change I fancy all parties would find their prejudices unruffled, as, of course, the selection would be in consonance with their own ideas; at least, the fault would then rest decidedly with themselves if their individual predilections were not satisfied. As having attended so very many meetings on poultry publicly held in most parts of the United Kingdom, and thereby knowing this prevalent opinion, I trust my present intrusion, Mr. Editor, will by you be favourably accepted, as I assure you my only object is, like your own, to render such annual *réunions* as pleasing, faultless, and satisfactory as possible.—EDWARD HEWITT, *Eden Cottage, Spark Brook, Birmingham.*

NATURAL HISTORY OF THE HOUSE MARTIN.

At Bishop's Waltham, Hants, near the ruins of the Episcopal Palace, is a large pond, anciently formed by damming up a rivulet which flows through the grounds from Northbrook (so called from the brook itself) to Botley. This pond, no doubt, in former times, was a valuable appendage to the Palace for supplying, as it was intended to do, our Venerable and Right Reverend Prelates with choice fish when they had their residence there, before Cromwell's devastating forces battered the noble structure, and, by virtue of his Protectorship, rendered it, as it has been ever since, uninhabitable.

The old historian, John Leland, who, I believe, wrote in the reign of Henry VIII., speaking of Bishop's Waltham, says in his Itinerary, "Here the Bishop of Winchester hath a right ample and goodly Maner Place motid aboute, and a praty brooke running hard by it." By which we may infer that in his time the fish-pond had no existence, and the "praty brooke" only was found there.

The pond, like the buildings near it, has been neglected (though still noted for pike and eels, and a few small finny fry), and is grown over very much, particularly about its borders, with Bulrushes and tall Sedge, making a convenient shelter for a few wild fowl that occasionally resort thither; and this brings me to the object I had in view in troubling you with this paper.

In the summer evenings, and particularly during the late very warm weather (in August), I noticed that the House Martins took up their nightly abode in these Bulrushes and Sedge. If I say that *hundreds* of them were to be found there I am sure I am within the truth. They kept up a continual twitter at nightfall, till some time after sunset, when the sound gradually died away, as if Morpheus had hushed them to repose, and induced them to rest in peaceful slumbers till the dawn of another day should call them forth again to take their active and airy flight in search of food.

But the question I wish to ask, arising out of the above, is, if it is usual for these birds to congregate in those places, as I have never observed it before? I know some naturalists have said that instead of emigrating, as it is now well known they do, some of this hirundine family cluster together like bees in a swarm, and sink in a torpid state beneath the water, during the winter season. May not this absurd notion have arisen from the circumstance now first observed by me as above stated, and the fact that the birds are generally, or often, first seen in the spring, skimming on the wing over some lake or pool of water for the insects there found, which constitute their food?—T. M. W.

BIRMINGHAM POULTRY SHOW.

WE are enabled to state that the applications for certificates of entry in the several departments of the approaching Show in Bingley Hall have been very numerous; sufficient, indeed, to lead to the conclusion that there will be a fine display of stock, roots, and domestic Poultry. Among the exhibitors of stock, in particular, there will be found some influential additions, while the old supporters of these meetings will not be absent. The change in the fixture, as we had anticipated, will add strength to the Show, by offering two opportunities to those who are anxious to take part in competitions of this nature, and who will send on their stock to London at the close of our own Exhibition. For this purpose it will be most desirable that special railway accommodation should be afforded, so that there may be as little delay as possible,—a matter which we hope will not be lost sight of. The entries close on Saturday, the 1st day of November; and we may add, for the information of exhibitors of poultry, that a sufficient sum has been placed at the disposal of the Council to enable them to offer two Silver Cups, of the value of six guineas each, for *Brown and Partridge-feathered Cochins*, instead of the ordinary prizes in the two classes.

OUR LETTER BOX.

"HOW TOWDIES."—An Old Subscriber wishes to know what "How Towdies" are. They are mentioned every week in the *Inverness Courier* in the market notices, and the price is 3s. 6d. a pair."

[We are told that they are two-year-old fowls of any breed.]

CLEANING THE WHITE TOP-KNOTS OF BLACK POLANDS (*G. Ray*).—They should be washed with warm soap and water, either with a sponge or a painter's brush; the latter is preferable. The bird should then be put in a basket before a fire.

LONDON MARKETS.—NOVEMBER 3RD.

COVENT GARDEN.

Markets still continue inactive, and the consignments from abroad have not been near so extensive during the week, comprising chiefly some rough descriptions of Apples from Jersey and the adjacent parts of France. Good samples of home-grown, such as the *Wellington* and *Blenheim Orange*, realise high prices where they are sound and in keeping condition. The *Potato* trade is dull, and the bulk to hand this week very inferior.

FRUIT.

Apples, kitchen, per bushel.....	8s. to 12s.
" dessert	12s. ,, 20s.
Pears, per dozen	1s. ,, 3s.
Peaches, per doz.	6s. ,, 10s.
Nectarines, do.	6s. ,, 10s.
Pine-apples, per lb.	4s. ,, 6s.
Hothouse Grapes, per lb.	3s. ,, 6s.
Strawberries, per lb.	0d. ,, 0s.
Foreign Melons, each	1s. ,, 3s.
English Melons.....	1s. ,, 4s.
Morello Cherries, per lb.	1s. ,, 2s.
Cherries, per lb.	0d. ,, 0s.
Oranges, per 100	10s. ,, 20s.
Seville Oranges, do.	0s. ,, 0s.
Lemons	10s. ,, 15s.
Almonds, per lb.	9d. ,, 1s.
Nuts, Filberts, per lb.	9d. ,, 1s.
" Cobs, ditto ..	9d. ,, 1s.
" Barcelona, per bushel.....	20s. ,, 22s.
Nuts, Brazil, ditto..	12s. ,, 14s.
Walnuts, per 1000 ..	9s. ,, 12s.
Chestnuts, per bushel	0s. ,, 0s.

VEGETABLES.

Cabbages, per doz.	1s. to 1s. 6d.
" Red, per doz.	2s. to 4s.
Cauliflowers, each....	2d. ,, 4d.
Brocoli, per bble	0d. ,, 0d.
Savoy..... ..	0s. ,, 0s.
Greens, per doz. bnch.	2s. ,, 4s.
Spinach, per sieve ..	— ,, 4s.
French Peas, per bshl.	0s. ,, 0s.
French Beans, per hlf. sv.	1s. 6d.
Carrots, per bunch ..	4d. to 6d.

Parsnips, per doz.	6d. to 9d.
Beet, per doz.	1s. to 1s. 6d.
Potatoes, per cwt.	3s. to 6s.
" Frame, per lb.	0d. ,, 0d.
" New, per lb.	0d. ,, 0d.
Onions, Y'ng, per b'nch.	4d. ,, 6d.
" Old, per bushel	0s. ,, 0s.
Turnips, per bunch....	3d. ,, 6d.
Leeks, per bunch	2d. ,, 3d.
Garlic, per lb.	6d. ,, 8d.
Horseradish, per bundle.....	1s. 6d. to 2s. 6d.
Shallots, per lb.	6d. to 1s.
Lettuce, Cos, per score	1s. ,, 2s.
" Cabbage, per doz.	0d. ,, 3d.
Endive, per score ..	0s. 0d. ,, 0s.
Celery, per bunch....	9d. to 1s. 6d.
Radishes, Turnip, per dozen bunches	— to 6d.
Water Cresses, ditto..	6d. ,, 9d.
Small Salad, per punnet	2d. ,, 3d.
Artichokes, per lb.	— ,, 2d.
Asparagus, per bdl.	0s. ,, 0s.
Sea-kale, per punnet..	— ,, —
Rhubarb, per bundle	3d. ,, 6d.
Cucumbers, each.	4d. ,, 6d.
Mushrooms, per pot.	1s. 6d. ,, 2s.

HERBS.

Basil, per bunch	4d. to 6d.
Marjoram, per bunch	4d. ,, 6d.
Fennel, per bunch ..	2d. ,, 3d.
Savory, per bunch	2d. ,, 3d.
Thyme, per bunch ..	2d. ,, 3d.
Parsley, per bunch ..	2d. ,, 3d.
Mint, per bunch	2d. ,, 3d.
Green Mint	6d. ,, 8d.

POULTRY.

There is still an ample supply of everything, while the demand is rather less than otherwise. Pheasants are more plentiful than they were.

Patner less than otherwise. Pheasants are more plentiful than they were.	
Large Fowls 4s. 6d. to 5s. 0d. each.	Hares 3s. 0d. to 3s. 3d. each.
Smaller do 3s. 6d. to 4s. 0d. "	Ducks 2s. 6d. to 3s. 0d. "
Chickens .. 2s. 0d. to 2s. 6d. "	Geese..... 6s. 0d. to 7s. 0d. "
Grouse 2s. 0d. to 2s. 3d. "	Rabbits.... 1s. 4d. to 1s. 5d. "
Partridges.. 1s. 6d. to 1s. 9d. "	Wild ditto 8d. to 10d. "
Pheasants .. 3s. 0d. to 3s. 6d. "	Larks 0d. per doz.

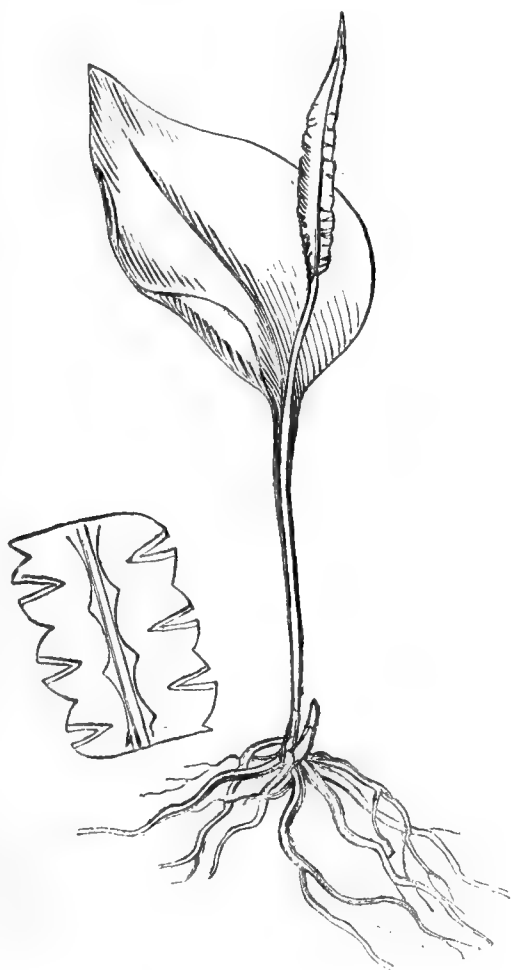
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WEEKLY CALENDAR.

D M	D W	NOVEMBER 11—17, 1856.	WEATHER NEAR LONDON IN 1855.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
11	Tu	The autumnal dagger Moth.	30.226—30.164	58—44	S.W.	00	14 a. 7	15 a. 4	5 50	14	15 46	316
12	W	Larch leaves fall.	30.182—30.020	50—42	S.E.	00	16	13	risers.	15	15 39	317
13	Th	Apricot leafless.	30.012—29.972	48—37	N.E.	00	17	12	4 a 29	16	15 30	318
14	F	Beech leafless.	30.008—29.955	46—27	N.E.	00	19	10	5 14	17	15 21	319
15	S	Titmice near houses.	30.168—30.084	47—22	W.	00	21	9	6 17	18	15 10	320
16	SUN	26 SUNDAY AFTER TRINITY.	30.234—30.187	47—27	S.W.	00	23	7	7 31	19	14 59	321
17	M	Necrobia rufipes.	30.223—30.185	47—42	N.E.	00	24	6	8 51	20	14 47	322

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 49.8°, and 35.5°, respectively. The greatest heat, 63°, occurred on the 12th, in 1841; and the lowest cold, 15°, on the 16th, in 1841. During the period 95 days were fine, and on 101 rain fell.

OPHIOGLOSSUM VULGATUM.



THAT this is a Fern very distinct from all others is demonstrated by the fact that it has never received from botanists any other generic name than *Ophioglossum*, and with but a solitary exception no other specific name than that under which we notice it. The exception is *O. ovatum*, the name under which it is described by Mr. Salisbury. Its English name is equally unique, being known by no other than Adder's Tongue. The botanical name is merely a translation of this, derived from the Greek words *ophis*, a serpent, and *glossa*, a tongue.

Root small, carrot-shaped, with numerous stout, yellow, smooth, fibrous rootlets, spreading horizontally. *Frond* from three to nine, and even more inches high; its stem pale green, round, hollow, and tapering downwards; the barren lobe of the frond, usually called the leaf, stalkless, solitary, egg-shaped, lurid green, nearly upright, sheathing the stem; the fertile lobe, which gives the plant its name, from its somewhat tongue-like

shape, is really a spike of fructification, as in the *Botrychium* and *Osmunda*; it rises from within the base of the barren lobe, stalked, narrow, slightly tapering upwards, pointed, bearing the fructification in a line along each of its two edges; the fructification is embedded in roundish, yellow masses, which, gaping when the spores have escaped, present a series of clefts along each edge. This tongue-shaped lobe is usually entire, but sometimes is divided into two; the leaf-like lobe, also, though in general whole, is occasionally deeply cleft at the top.

It is usually found in meadows and moist pastures; but we have also found it in Hampshire, in an open copse, in an old chalk-pit at Abbot's Barton, near Winchester.

In *England* it has been found, also, at Middleton-one-row, Durham; Round House, near Richmond, Yorkshire; West Felton, Shropshire; behind Heawood Hall, near Alderley, Cheshire; near Warrington, Lancashire; near Braimston, Leicestershire; Heanor and Love Lane, near Derby, Derbyshire; Colwick, Nottinghamshire; Broadmoor, near Birmingham; Pottery Car; near Blymhill, Staffordshire; near Bristol; at the side of a pond on Wike Farm, Sion Lane, Isleworth; near the ladder-stile, Osterley Park, near Brentford, Middlesex; at Beddington, near Bungay, and Meltingham Castle, Suffolk; four miles south of Dorking, Surrey; meadows of Longleat, Wilts; about Slateford, near Barnstaple, Devon; and in various parts of Norfolk, Herts, Kent, and Hants.

In *Scotland*, in Dalmeney Woods, near Edinburgh; in Orkney; at Balmuto; and at Carlowrie.

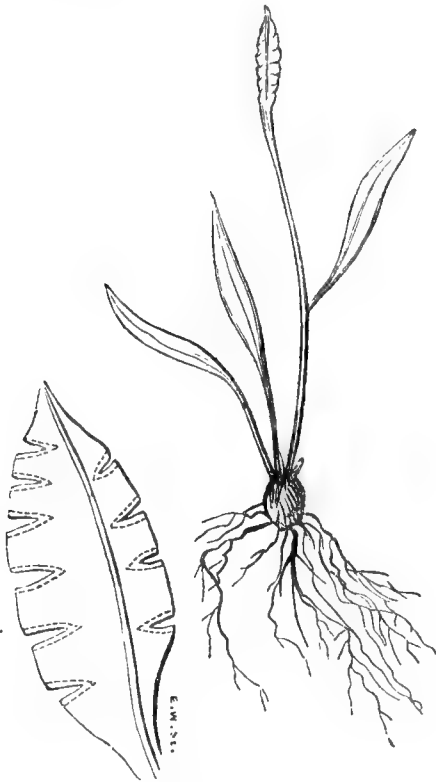
In *Wales*, near Wrexham; and on the lawn of the Observatory, Dunsink, and many other parts of *Ireland*.

The first writer mentioning it as an English plant is Dr. William Turner, who, in the third part of his *Herball*, published in 1568, says, "The Adder's Tongue, or Ophyoglosson, groweth in moyst and medowes in the end of April;" adding, after giving a very characteristic woodcut, "This is a wounde herbe, and healeth woundes which are almost uncurable, or at the least wonderfully hard to be healed. The nature of it is also to dryve away great swellings, and to prevent extreme inflammations. Some use to bruise it with Swyne's grese, and to kepe it and laye it upon swellings; but I counsell rather to seth it when it is grene with sallet oyle, and to kepe it, and then will it be good both for swellings and woundes also." This is still used as an application to

fresh wounds, and country-people know it as "Adder's-spear ointment."

There is a very permanent variety of this Fern, which by some botanists has been raised to the dignity of a species, under the name of *Ophioglossum Lusitanicum*, the Spanish or Lesser Adder's Tongue. Its only remarkable differences from *O. vulgatum* are its shorter growth, its producing more than one leaf, and the leaves being stalked and spear-head-shaped.

The accompanying drawing will best make its differences understood.



"For its discovery in the Channel Islands we are indebted to Mr. George Wolsey, who found it among short herbage on the summit of rocks not far from Petit Bot Bay, on the south coast of the Island of Guernsey, growing with *Trichonema Columnæ* and *Scilla autumnalis*." (Sowerby's Ferns, edited by Charles Johnson.)

Mr. W. Reeve, writing to us relative to the culture of these Ferns, says:—

"The *Ophioglossum vulgatum* is scarcely worth cultivating unless for curiosity, or for completing a collection, in which case it should not be absent. Although of simple appearance, yet, when cultivated with other species of Ferns, it will not fail to give satisfaction, and, like the *Ophioglossum Lusitanicum*, may be very easily grown, and will soon spread and form a mass, under favourable circumstances, at the base of the Fernery or rockery. Let it have a compost of equal parts loam, leaf-mould, and peat, with an admixture of sand. There is not enough interest in the plant itself to be grown away from other Ferns.

"It may be also grown in pots, or wide, shallow pans, in the same compost. It must be potted firmly, with a good drainage, and requires a good supply of water. It may be propagated by division, or by the fructification, to be treated in the same way as directed for former genera. It will be as well to give both these Ferns a slight protection in winter when cultivated in pots. Each will thrive well in the greenhouse."

report of such a variety of different fruits will necessarily be a long one, we are compelled to leave the publication till next week.

KINGSTON NURSERY.—Nov. 1st.

ALL the plant-houses in Messrs. Jackson and Son's Nursery are numbered from one onwards, except the conservatory, a fine large show-house, with one end against the London Road, where all who pass may see every plant in the house. There is not another show-house in the trade, that I know of, which is better furnished all the year round than this.

The chief plants which were in flower in this house on the above-named day were, *Erica hyemalis*, *Archeriana*, *assurgens*, *autumnalis*, *gracilis*, *Westcotia*, *grandinosa*, and *curviflora lutea*. There is a large collection of *Heaths*, for which this Nursery has been celebrated as long as I remember; and there are now as large specimens of them to be had here as anywhere in this country, and as well grown and as good in health.

Along the end of the conservatory facing the road the first row was of *Golden Chain Geranium*, *Mountain of Light*, *Lady Plymouth*, *Kinghorn's Anna*, a great favourite here, which, they say, is the only one of them yet which will supersede *Flower of the Day* in beds, with an assortment of all the variegated kinds, of which they hold a large stock. Variegated *Hydrangeas*, *Chinese Primroses*, and behind these *Pompones* and *Baron Hugel Geraniums*. Fine specimens of this kind flower very late if kept on short commons early in the summer, and if they get a good honest shift in August and September for a succession. For all common purposes, such as weddings, routs, balls, public breakfasts, private and public dinners, and all sorts of gatherings where it is safe to smell or see flowers, this firm supply them at all seasons, and take them back again if the people do not want them after the fuss is over.

A few variegated, little, very pretty standard and half standard *Orange-trees*, from a foot to twenty inches high, are here, with some other things. Then along a side or front shelf, running the whole length of the house, the arrangement was unique, quite new to me, and very good. Thus, three pots of Variegated Geraniums, all of one size and close to the edge, and one pot of *Isolepis something*, which will puzzle some one some of these days. It is a most elegant drooping grass, as one might say, but not exactly a botanical grass. If I mistake not, however, I have seen a goat placing it in the same natural order as the sweetest grasses. Then three pots of Variegated Geraniums and another pot of *Isolepis*, and so on to the farthest end of the house; and the effect was very good indeed. *Fuchsias* in bloom, and a whole miscellany came in behind this front row; and overhead were hanging baskets, one from each rafter, also as straight as the grass, and dodge and grass again line.

In the body of this house *Camellias* took the lead, and will keep it through the winter. They are remarkably well in bud this season, probably owing to the extreme length of the summer drought. Hereabouts this season our hedgerows were yellow in leaf, and fast falling for want of rain, while we were reading of crops being flooded in other parts. Among large specimens of *Camellias* stood a gigantic Indian Lily, *Lilium giganteum*, in full seed, at the end of a six-foot stalk, as big as a Larch pole; seed-pods eight in number; shape like the berry of a *Fuchsia*, and size of a hen's egg, but longer. If we say that each pod is three-celled, "seeds packed one upon another in one or two rows," and that it would take four thousand of this seed, one upon another, to make up one inch in depth, who will tell how many seeds are or were in all?

A MEETING of the BRITISH POMOLOGICAL SOCIETY was held on Thursday last, which was numerously attended, and at which there was a large collection of fruit. The Meeting did not close till late in the day, and as the

After these *Gardenias*, *Daphne Indica hybrida*, *Salvias*, *Gazanias*, large specimen *Fuchsias*, *Commander-in-Chief* and *Sir Colin Campbell*, with the present *Baron Hugel* Geraniums, made the most display; but, as flowers are here thought to be essential for "setting off" all kinds of house-plants, we cannot expect to find but an equal share in the show-house. There are flowers in all the houses.

Now for house No. 1, a splendid house just now, a new span-roofed house, the ridge in the direction of the sun at noon—the very best for all plant structures, be it a Cabbage or a *Campanulatum*. It is sixty feet long, and twenty feet wide; a door at one end only and in the middle; a stage all round; then a broad path, and the bed in the centre, a few inches lower than the path, to hold specimen stove-plants during the winter; the heat in hard frost not more than 50°, and from that to 60° at other times. Here are the "fine-leaved" and the best variegated plants "not in bloom" to pass the winter. The "front stage" all round, and the broad stages over the line of the paths, are subjects of study and sound judgment, as we shall see presently; but let us go over the large specimens first.

Aralia macrophylla, fine indeed. *Cordyline australis*, the very best plant of all the plain green-leaved Lily-worts when they are not in bloom, and nearly as hardy as an *Agapanthus*, although they keep it here, being a favourite. *Dragon-trees* (*Dracena*), which keep out so well during a long winter in country places. Few people have seen the carcass of a dead ass; but fewer still that of a Dragon-tree. I never saw either; but I lately heard of a most excellent gardener, who really did so manage as to kill several Dragon-trees outright. I never could. A tall standard of *Xylophylla latifolia* with 10,000 flower-buds, many of them ready to open, and they will go on all the winter for ever so long—a noble plant. *Dioscorea discolor*, a huge stove climber, carrying all the beauty in its richly-coloured leaves. *Dion edule*, from Mexico, a Palm-like plant, but as true a Cycad as *Cycas revolutum*. It is so common in some parts of Mexico as to furnish "victuals and drink" to the natives, its very large seeds being ground for Arrowroot, and is one of the cleanest and handsomest-looking plants of all the Cycads (*Cycadaceæ*). *Dichorisandra thyrsiflora*, which is one of the richest of all our winter flowers, and the surest and easiest to get in bloom of them all from this department; long upright spikes of the most rich, deep blue Violet colour, with a white eye to each flower. *Pandanus Javanicus variegatus*, as it is gardenways called, is a most Gardener's-Garter-looking leaf, and a fine thing, but will sulk and turn green without good heat. If you keep the air moist enough, and under the boiling point of this latitude, this Variegated Screw Pine will flourish. *Cissus discolor* ditto; large *Ixoras*; a fine, noble-looking Fern, the *Blechnum Corcovadensis*, from beyond the Corcovad mountain, near Rio. *Begonia Seemanniana*, like *Parviflora* in bloom, but tall, stout below, and asslender in the branches as *Parviflora* itself; several varieties of *B. xanthina*, and many others. On the shelves over the paths are a host of smaller plants for cut-blooms and for early cuttings. *Cinerarias* to come in for Christmas; *Heliotropes* to cut from all winter; lots of Variegated Geraniums, *Pelissier* and others, to form specimens, and to cut from; *Anagallis* to get very early cuttings from, the old plants being very apt to go off in February—a good hint to country gardeners; *Tom Thumbs*, and lots of the dwarf *Begonias*. The rafters are covered with such climbers as *Ipomæa Horsfalliæ*, now in bloom, *Stephanotis*, *Hoya imperialis*, *Hexacentris Mysorensis*, *Passiflora amabilis*, a fine cross, apparently between *Princeps* and *Quadrangularis*, with flowers as good as those of *Loudoni*, for such large houses as the conservatory at Shrubland Park. On the front shelves along the paths a large stock of *Statice ar-*

borea and *macrophylla*, *Luculias*, *Ixoras*, of which *crocea* was, and will be, in bloom for a long time yet; a large plant of *Bouvardia leiantha* in fine bloom; and one of the largest specimens in the country of *Cactus truncatus*, coming into bloom in the middle bed. To prolong the season of this good old customer, all that is necessary is to disbud the bloom-buds at this stage, but not to touch the flesh of the parts whence they issue. By-and-by two or more flower-buds come for each that is now cut, and thus, by earlier and later disbudding of different plants of it, *Truncatus* may be had in bloom from November to March. *Rondeletia anomala*, very curious flowers. On the farthest end-shelf for head-room are large specimen Ferns of such rare and good old kinds as *Pteris Kingianum*, *Cibotium Schiedei* and *Barometz*, *Polypodium effusum* and *Diplazium Seramporense*—all fine for making a great show. A huge *Medinilla magnifica*, also *M. speciosa* and *Sieboldiana*. Then follow a host of the small-leaved *Chinese Azaleas*, in forcing for early bloom, and large plants of *Tom Thumb* Geraniums in bedding bloom for the first corner, and *Rigby's Queen*—the best scarlet Geranium for cut-bloom all the winter. Overhead, at the north and coldest end, were sundry greenhouse-plants—hard-wooded, delicate kinds, "to brush them up a bit," and to get soft cuttings for an easier "strike;" and, last of all, a large plant of the *Dumb Cane* in full bloom, and such blooms!

House No. 2, a stove in earnest, a long, narrow lean-to, erected this autumn. It is principally filled with Palms and Orchids. A Palm with a swallow-tail-like leaf is very conspicuous. It is *Plectocornia Assamica*, and is in the way of *Cyclanthus bipartitus*—another swallow-tail Palm. Another Palm, called *Areca lutescens*, is very conspicuous for having the long stalks and young growth of the Golden Chain colour. A large batch of *Impatiens Jerdonia* in fine bloom will be so all the winter; *Calanthe vestita*, two kinds of ground Orchids, which bloom always in winter—large white flowers, with a pink eye to one and a yellow eye to the other, most useful kinds, and easy to manage. *Tydaea*, a most egregious tom-foolery of a name for a lovely cross-seedling between an *Achimenes* and *Gloxinia*, which will be run after as soon as known. The name looks like one of those mince-pies in the Flore des Serres of Ghent, where any mortal thing will hash up for a new name to catch a penny—a light wax flower, with deeper markings. *Mandirola Roegli* is another of these fine crosses, and is more of a lilac colour. Lots of *Begonia picta*, one with the finest-marked leaves in the family, first introduced from India by Mr. Low; a new *Begonia*, from Bahia, that will "take" on account of the leaf; and *Begonia frigidum*, with hoar-frost-like glands on the leaves when viewed in good light—good plants of the most difficult plant in Europe to grow well, and one of the best of the very old kinds. The *Jatropha panduræfolia*, *Amphicoma Emodi*, a fine new kind, without the least resemblance to *Arguta*. *Calyptraria hemantha*, "the most glorious plant" ever introduced, according to Dr. Lindley; and I think Dr. Beaton once went pretty nigh the same length, when he told "as how" that the other Doctor did not know it at a Chiswick Show, which was only a make-believe, of course, to save us a gold medal. All kinds of *Marantas*, including the *Kew* or *Kewensis* variety of *Lineata*, which is the best of them; the new *Centradenia Skinnerii*, just coming into white bloom. It puts one in mind of *Osbeckia*; but the species I forget just now. A new *Hexacentris* or *Thunbergia*, in the way of *T. coccinea*, from Burmah; *Anæctochilus*, and a capital new way of having water-plants in common brown earthenware pans, such as they use for curing tongues in, or anything that way. All you have got to do is to buy lots of them at a crockeryware shop, set them down where you want them to be seen, fill

them nearly half full of strong loam, plant your Bog-worts in the centre, then put an inch or so of silver sand over the whole surface of the mould, still holding up the plant in one hand for fear of mauling it about; now tell your man or Susan to fill up the pan with water clear as crystal out of the spout of some silver vessel. All must be silver or silver-like cleanliness about this job, for fear of making a milk-and-water or a muddy mass of it. Let the water pour on the side of the pan as gently as can be, and when the pan is full enough let go the top of your plant, and the whole thing is as clean as a new pin, and looks ten times better than all the glass pans in the world. But to prove this to your own satisfaction, put down a row of No. 16 pots, bran new from the pottery, one behind or before each of the earthenware pans, and get as many of the largest bell-glasses, and put one of them in each pot bottom upwards, fill with loam, sand, and water, plant and all, as above, and you will see the difference; but, if you should prefer the glasses, stick to them, and mount each of them on a golden lotus in the drawing-room for an *aquarium*, to rear and keep all manner of small living things, the tinyworts from the two kingdoms, as they do at the Zoological; but we shall keep to the pans hereabouts.

Where the hot-water pipes enter this house there are several sets of iron troughs, perhaps ten inches deep and a foot or eighteen inches wide, so many lying side to side, as many to follow at the ends, and so on, every trough being connected with the one immediately before and behind it by inch pipes for flow and return. Those next to the pipes are similarly connected with the main flow and return. Such a contrivance could be put up in any old house where hot-water pipes were, by merely drilling one hole in the top pipe and another in the bottom, and the smallest gas-pipe would answer both, and to communicate from trough to trough, or from cistern to cistern, or with one large cistern. The object is to get a *regular* hotbed for bottom-heat, to do all manner of things, and to help the heating of the house at the same time; also to keep the air to the proper pitch of moistness. Here an iron net-like grating covers the whole of the trough; then a thick layer of moss to plunge pots in, such as pots of all kinds of *Pitcher-plants*, rare stove-plants, and everything looks as well as if in a dung hotbed. I am quite sure, if "THE DOCTOR'S BOX" understands me, he could show the gardeners how to "play a hand" at more games than one. With a Vinery on the hot-water system, to begin forcing on the 1st of March, he would make a Waltonian hotbed to strike cuttings and get up seeds, Cucumber-plants, and everything, in fact. The first thing would be to get a box, if ever so rough or ever so long, and place it on bricks, or on the Vine-border inside, on a level with the bottom pipe. If the box would not hold water he would put inside it a box that would. Any smith could drill a hole in the top pipe, and put in a gas-pipe to enter the box at one end, and in the bottom one to receive a pipe from the other end of the box. Do you, brave "Boy," just think it over. D. BEATON.

ANSWERS TO BEGINNERS.

(Continued from page 75.)

SCARLET GERANIUMS, &c., BENEATH A GREENHOUSE STAGE.—"I have more young Scarlet Geraniums; old ones I wish to raise from the border; fancy kinds, as *Floribunda*, *Yatemanianum*, *Lady Mary Fox*, that I cannot find room near the glass for without putting up more shelves. Could I not keep them well beneath the stage on the floor, where a considerable amount of light reaches, and also good Dahlia roots when taken up? If so, how

manage?"—I can only say, yes and no. No better place could be found for Dahlias, provided you take care in watering the pots above them. The same answer as to the old Scarlet Geraniums, and lose no time in taking them up, as they will keep so much better if never touched by frost. Wheel them to your rubbish-heap, slip or break off all the very soft points, and remove every leaf larger than a fourpenny-bit, and pack the plants as close as they will go together on the floor of the house, covering the roots with light, sandy soil, with a little leaf-mould in it if you can get it. If at all damp the soil need not be watered. Give the tops a gentle syringe, and repeat the operation on some fine, sunny day, to keep the stems plump. Secure this, and the less water given the better. The chief perspiring organs being removed, the succulent stems pretty well absorb as much as they perspire. The removing of the foliage is a great point of success. Young plants, unless struck early, would not long keep in health under such circumstances. The fancies will do better; but even they will not long succeed. With the exception of *Diadematum rubescens*, &c., most of them bloom as well from young plants as from older ones. If you resolve to take them up, save what roots you can, remove all but the very small leaves, and pack them thickly in pots and boxes, in light, sandy soil, and keep them close until the roots begin to grow, when they should be more exposed to light and air, and kept cool, and get more room in the spring, when hardier things may be turned out into turf-pits and other means of protection out of doors. This subject has been so thoroughly ventilated that nothing afresh can be advanced.

GOLDEN CHAIN GERANIUM.—"I have a few good plants, and I wish to increase them. Shall I try cuttings now?"—Decidedly not, unless your conveniences of preventing damp are all right. Had you tried in July it would have been different, or even in August. Better defer now until spring, when, if the plants are growing and the cuttings favoured with a brisk heat, almost every one will be sure to strike. I previously stated that there was a difficulty in getting this beautiful thing to propagate freely; but now I am convinced that the difficulty arose from using such small, tiny bits as cuttings. Another error I committed was allowing the base of the cuttings to dry a little before inserting them. They do not seem to lose any of their moisture with impunity. By inserting fair-sized cuttings in a border in August they struck almost as well as other Scarlets. I am convinced that drying the base of the cutting a little, and using very small bits, were the reasons why I lost such a large percentage. Last season I made a number, and left the ends exposed for a day, the tops being moistened and covered. Next day one of my young men made some more, and inserted them directly, and very few of his went off in comparison with mine, though he picked out both, and treated them alike; he, however, having made larger cuttings. There is such a desire for this beautiful thing that these facts may be useful. I should have no objection to have as many thousands as I have hundreds of it; for, even if I did not want them all, I could have the pleasure of presenting them to those who admired them.

OLD PLANTS OF SHRUBBY CALCEOLARIAS.—"Could not I take these out of the beds, and keep them in a cold pit? if so, should I pot them, or plant them in earth at once?"—I incline to the latter mode as the best. Prune the softer part of the heads and the flowers away, lift with moderate balls, and place the plants as thick as they can be squeezed together in light, rich, sandy soil; water freely, and give plenty of air, and shut up only when frost is apprehended. This tribe suffers little from damp, and in severe weather, provided the temperature is not above 40° inside, nor much below 30°, may be shut up for weeks and be uninjured. By May, however,

though large, yet upon the whole they will be little superior to cuttings struck in October, and room afforded them after March.

"Can such cuttings of *Calceolarias* be struck now?"—Yes, all through the winter, but especially in November. In October they want no bottom-heat, merely to be kept close and moist. In November they would be none the worse for a little bottom-heat, such as would be afforded by an old, nearly spent hotbed; but they will do capitally in an average temperature of 40°, with a rise in the middle of the day from sunshine. Provided the soil is moistish, not wet, the atmosphere moist and close, and the heat not much below 40°, these cuttings will strike faster now than in September. A great number of queries have been sent to me, and a great many plans presented kindly for my consideration, and all of them answering admirably; and I would only say to each and all, Stick to that plan you find best. Never mind if a proverb should be circulated about "gardeners differing," so that we differ and respectively succeed. I mentioned lately a simple mode, by which I hardly ever lost a cutting—"One friend succeeds best with hand-lights." A great gardener has struck his stock for some years under hand-lights in drained, sandy soil, placed under the shade of an Apple or a Filbert-tree, and some of my friends are so enraptured with the idea, that they next think to say that it is the only way to success; and, to oblige them, you must cheerfully walk fifty or a hundred yards, or ever so much more, from the general propagating-place to this favoured tree, to see how nice they look; and very nice I have seen them, though they might have been quite as nice without a tree, or any other striking peculiarity, provided that in autumn propagating—for to that only I refer—the soil was sandy and moistish, and the atmosphere cool, close, and moist, and the fierce rays of the sun excluded, but light admitted, such as can always be secured on the north side of a fence. Secure these conditions, with proper cuttings, and success is certain, whatever be the peculiar mode adopted.

R. FISH.

CULTURE OF THE GOOSEBERRY.

(Continued from page 58.)

SUMMER MANAGEMENT.—This consists in pruning, gathering, preserving, and protecting the fruit; also destroying insects, and keeping the ground free from weeds.

Pruning.—When the trees are very vigorous they are apt to push forth from the centre of the tree a considerable number of strong, watery shoots, which the French call *gourmands*, a word that may be translated into *gluttons*. These not only rob the tree of strength, but, if they are allowed to remain, shade the fruit from the beneficial influences of air and light. To prevent that evil, and to strengthen the fruit-bearing shoots, these gluttons should all be removed. The best plan is to slip them off close to the stems from whence they spring, and that in good time, that is, in the early part of June.

Some kinds of the Gooseberry send forth their shoots in a drooping position. Such shoots should be tied to short stakes, to keep them up from the ground; they will strengthen in that trained position, and keep it the second year. Other kinds grow quite upright, clustering their old and young shoots in a dense bush. These kinds should be spread open nearly horizontally by means of hooked sticks or hoops fastened to short stakes, and the young shoots brought down and tied to the hoops. During summer it will be of advantage, in dry weather, to give copious waterings of manure-water, not too strong; also, before the fruit ripens, to syringe the bushes freely every evening. This syringing greatly

helps to keep down the red spider, as well as feeding the tree and keeping the foliage clean and healthy.

GATHERING THE FRUIT.—*Unripe Gooseberries* are much esteemed for making tarts and creams. Too often, however, the first largest fruit is picked for these purposes. This is very injudicious: the smaller fruit should be taken, and the larger left for ripening. Where very large fruit is required the trees should be young. Four years old is the best age and size to produce fruit such as we see at the Gooseberry Shows in Lancashire and elsewhere. Then from six to a dozen fruit on one of these young, healthy trees is all that should be allowed; the others should all be clipped off before they are the size of peas. For general crops, moderate thinning, when the fruit is large enough for tarts, may be resorted to with advantage and profit. It is the practice of most families to preserve Gooseberries green, so as to have them fit for use in winter. This is accomplished by putting them in bottles with wide mouths. The bottles should be filled with moderate-sized fruit, and nearly filled up with cold water, corked, and sealed; then place the bottles in a large, flat-bottomed, iron pot nearly full of water, set it on the fire, and gradually heat the water to nearly the boiling point; then take the bottles out, and place them in a cool cellar. Some place them in the soil behind a north wall, turning the bottles upside down. Another way is merely to bottle them without water, cork tight, and seal with resin, and place them upside down in a cool cellar.

Ripe fruit is used for the dessert, and is also preserved with sugar—a method so well known that I need not describe the process.

The season for the ripe fruit may be considerably prolonged by covering the bushes with garden mats; but the fruit must be nearly ripe before the covering is applied, or it will have a poor flavour.

Birds and wasps are very fond of this fruit when ripe. It may be protected from the former by a covering of netting. If the trees grow in a compartment to themselves, the whole may be covered with nets, raised high enough to allow the gatherer to creep under to gather the fruit as it is required. Wasps are more difficult to manage; the only way is to destroy their nests, and place bottles half-filled with sweet liquor to entice them in, where they will soon die.

INSECTS.—*The caterpillar* is the most formidable; for if allowed to have its full swing, not a leaf will be left on the trees, and the consequence will be, the fruit will never ripen, and the wood will be thin and weak, and barren the next year. Various are the means that have been used for their destruction, but none so effectual as hand-picking as soon as they appear. All the nauseous mixtures recommended by various authors are, to say the least of them, almost as injurious to the health of the trees as the caterpillars themselves, besides giving the fruit an ill flavour. Forking the earth deeply around the trees is, I believe, of advantage, for there the chrysalides of many species are deposited. A good watering of strong manure-water over the branches in winter helps to destroy any that may be deposited in the crevices of the rough bark.

The red spider, in dry seasons, is almost as injurious as the caterpillar. It may be got rid of by syringing with soap-water; but then it must be applied early, or the fruit will be flavoured with it. I have kept them clear for years by merely syringing frequently and strongly with clear water, and wetting the under-side of the leaves by using a bent syringe.

PROPAGATION.—The Gooseberry may be increased as easily as the common Willow, providing proper care is used in making cuttings at the right season, and planting them properly.

The cuttings should be at least a foot long, and of

firm, ripe wood of the same year's growth. The best time to make them is as soon as the leaves turn yellow, which, in most seasons, occurs about the last week in October. Observe, after the wood is ripe, the sooner they are cut off, formed, and planted, the more certain will be success achieved. The way to make them is to cut off the lower end of each cutting horizontally, that is, right across; then cut close off all the buds excepting the uppermost three or four. The reason for this is to prevent the production of suckers, which are always injurious and troublesome. The cuttings may either be planted with the spade or the dibber, but should always be made very firm in the ground. They should stand out of the ground a few inches, so as to form a stem below the first shoots. This enables the grower to form a neat, handsome bush clear of the ground.

To form standards, the leading shoot should be tied to a stake the first year, and all the others pruned close off. It will most likely throw out several side-shoots; these should all be stopped during the summer, but plenty of foliage retained. The second year, if good growth has been made, this shoot will be at least three feet high. Then trim off all the side-shoots excepting three or four at the top. Prune these back to three or four buds, and they will shoot forth in the spring and form the head.

If the grower is desirous of propagating many sorts for sale of the plants, it is an excellent plan to plant two or three of each kind in a corner of his garden, and grow these especially to produce cuttings only: for such a purpose any weak, unsightly plants may be made use of. They should be planted slanting, so that the branches may reach the soil, to be spread out and pegged down. Every joint will strike root, and every bud will send up a strong shoot. These are what nurserymen denominate *stools*. The ground should be made very rich with a compost of decayed turf and well-rotted dung in equal parts. In such a soil the shoots will grow eighteen inches or two feet long, and such shoots make most excellent cuttings. The ordinary grower, for his own planting, will, of course, be satisfied with such cuttings as his plants will afford.

EARLY GOOD-FLAVOURED DESSERT VARIETIES.

Champagne, red; Champagne, yellow; Early Green Hairy; Golden Drop, the earliest; Ostrich, white; Whitesmith.

LATE DESSERT VARIETIES.

Coe's Late Red; Terry's Late Red; Warrington, red; Pitmaston Green-Gage; Wandering Girl, white; Viper, yellow.

BOTTLING VARIETIES.

Rumbullion; Green-Gage; Warrington.

PRESERVING VARIETIES.

Champagne, red; Ironmonger, black; Old Rough Red; Warrington, red.

GREAT BEARERS.

Red.—Crown Bob; Keen's Seedling; Warrington. *White*.—Eagle; Wellington's Glory; Whitesmith. *Green*.—Rumbullion; Profit; Glenton Green. *Yellow*.—Globe; Husbandman; Rookwood.

LANCASHIRE PRIZE VARIETIES.

Red.—London, 37 dwts. 7 grs.; *Companion, 31 dwts. 71 grs.; *Slaughterman, 30 dwts.; *Lion's Provider, 26 dwts. 22 grs.; *Conquering Hero, 28 dwts. 9 grs.; *Dan's Mistake, 29 dwts. 8 grs.

Yellow.—*Catherina, 32 dwts. 8 grs.; *Leader, 27 dwts. 3 grs.; Drill, 28 dwts. 15 grs.; Leveller, 22 dwts. 12 grs.; *Peru, 30 dwts.; *Goldfinder, 26 dwts. 16 grs.

Green.—Thumper, 28 dwts. 13 grs.; *Gretna Green, 27 dwts. 15 grs.; Queen Victoria, 26 dwts. 6 grs.;

*Rough Green, 27 dwts. 19 grs.; *General, 27 dwts. 14 grs.; *Turnout, 26 dwts. 21 grs.

White.—Freedom, 28 dwts. 15 grs.; Queen of Trumps, 30 dwts.; *Snowdrop, 34 dwts. 5 grs.; *Antagonist, 31 dwts. 14 grs.; *Snowdrift, 23 dwts. 15 grs.; *Lady Leicester, 30 dwts. 4 grs.

For the selection of the prize-winning varieties I am indebted to our old correspondent, Mr. John Turner, of Neepsend, near Sheffield, an excellent judge and good grower. He assures me that those marked with an asterisk are very handsome fruit, good bearers, and well flavoured when perfectly ripe. I might have extended the list very considerably, but the number (six of each colour), is quite sufficient for a moderate grower. I would advise such a grower to grow at least a couple of each variety except *Leveller*, the price of which is 1s. 6d.; all the others may be had at 6d. each. The weights quoted are taken from the Manchester Gooseberry Grower's Register for 1852. Some of the sorts have been grown much heavier since then. Those not marked with an asterisk are indispensable to a grower that intends to exhibit for prizes.

The reader will perceive that the growers use troy weight in weighing this fruit. T. APPLEBY.

THE WAY OF TRANSGRESSION.

By the Authoress of "My Flowers."

ONE of the most profitable employments of the mind is to look back upon the years that have passed, and to mark the changes and "chances," as man calls them, that have happened to those among whom our lot has been cast. It is amazing, and humbling, too, to consider the ways of God with man, and to trace the causes which lead to the effects we see. What we call misfortunes and reverses are called, by the Word of God, the punishments due to our sins; for "the Lord is very pitiful and of tender mercy," and does "not afflict willingly, nor grieve the children of men." If we consider our own ways we shall find that troubles have followed either sins or follies, and that to our own handiwork may be traced the events that press heavily upon us. Sometimes we cannot, sometimes we will not, see this; but the strongest proof of its truth is, that our neighbours can see it for us. Now, it is a painful employment to lay bare our own misdoings. We quietly leave that for other pens to unfold; but we see and can point out causes and consequences around us that may instruct and benefit others besides ourselves.

The kind friend who has so often lent his powerful aid in doing good to others by exhortation and warning against the evils incident to a fallen and corrupt nature, has again furnished us with an instructive and really terrific sketch of the path of a transgressor, which I thankfully place before our readers' eyes, beseeching them to lay their hands upon their own hearts as they follow the affecting narrative.

"It does not require a man to live to a patriarchal age, or his head even to bear the snows of mature years, to enable him to witness many ups and downs among his contemporary friends and neighbours. How many a man do we know now who bears about him the unmistakable stamp of poverty, who, twenty years ago, was a well-dressed beau, the envy of aspiring young gentlemen, and, perhaps, the admired of admiring young ladies! Alas, what a change there is now! How listless the step that then was vigorous and strong! how faltering the gait that then was all elasticity and spring! how subdued the expression of the face that then was all confidence and smiles! But how seldom does such a descent take place, unless helped on by the sins, or imprudence, or recklessness of the fallen man himself! I give this as an introduction to a narration of facts bearing upon the subject.

"James Anderson, when I knew him about fifteen years ago, was a gentlemanly, intelligent-looking young man, the son of parents who held an important position in a large provincial town, but who had failed, in the plenitude of their prosperity, to lay by for the exigencies of old age, and who left to their son little more than the advantages of an excellent education.

"Among my early school-fellows was a boy who, being about my own age, and living near us, became one of my constant companions; and I well remember that a favourite idea of his was, on reaching manhood, to emigrate to some lonely isle, Robinson Crusoe fashion, and to pass his time in taming parrots and reconnoitering savages; but one stipulation always accompanied his childish dreams, which was, that his eldest sister Mary should form one of the distinguished trio. Alas, poor fellow! he did indeed emigrate in after years; but it was to lay his bones in a foreign land, the victim of vicious intemperance.

"This sister to whom I allude was sent to a leading boarding-school, and there, by some means or other, caught the eye and fancy of James Anderson. Mary Redfern was a lady-like-looking girl, less remarkable for personal beauty than for an unpleasing forwardness of manner. How Anderson contrived to obtain an introduction to her I never heard; but it was done clandestinely, without the knowledge or approbation of friends on either side. Indeed, I have grave doubts whether the ignorance of the parents did not continue until the moment of the unhappy marriage. Be that as it may, Mary left her school, and returned to her parents, who resided in a small town some twenty miles distant, in a few weeks eloped with Anderson, and became his wife. Not a thought seemed to have entered the head of the reckless couple as to how they were to be supported. The husband had no profession or business to follow, and certainly this imprudent step was not likely to introduce him to either. He, however, took a situation as usher in a school, where he might have obtained at least a scanty subsistence had he been attentive to his duties; but a man who had shown such want of principle and ordinary prudence was not likely to be a pattern fitted for youthful imitation now; and so it proved, for he became intemperate, and soon lost his situation.

"When a man loses his self-respect it is astonishing how soon he sinks. Another opportunity, however, shortly offered itself for Anderson to retrieve his character. A gentleman in a large way of business, who had known his father for many years, and felt kindly for the position of his son, determined to give him a trial in his office; and though his former conduct had forfeited all claims for indulgence, yet this kind-hearted friend placed him in a situation where, had his conduct been satisfactory, his success in life would, humanly speaking, have been secured."

I must reserve the remainder of this narrative for a second paper; but I would beseech my readers to mark the *causes* of Anderson's misfortunes. We are too apt to stop and ponder and mourn over consequences. Let us always track the stream to its source, and we shall find turbid waters flow through a muddy soil, unkindly fruit from a cankered root, sorrows and troubles from deep-seated sin. Ah, readers! look back, be candid with yourselves: have you not already proved my words?

Again, mark the patience and compassion of the Lord! How He digs round and prunes the stubborn, unfruitful tree! How many opportunities He gives His rebellious children to "turn from their wickedness, and do that which is lawful and right!" How many times He calls to His disobedient people, "Turn ye, turn ye, why will ye die?" Oh! let us not say our case is *hard*, that we are cruelly dealt with, that we have none to help and deliver us. Readers, we deal hardly with ourselves; but we have none else to blame. James Anderson may be a more open offender than we are; but if we look boldly at ourselves, as our neighbour looks at us, we shall find that the mainspring of our misfortunes has been the work of our own hand.

GERANIUM DIADEMATUM.

Why should we not have the privilege of asking questions as well as the pleasure of answering them? I see a notice at page 77, for instance, and I would give a penny to know more about it; but how to set about it, without this privilege, is the question.

I failed completely to hunt up *Geranium diadematum*, yet "R. L." at that page, says he has grown it for some years, and I want a leaf or two in a letter to make sure if he has

the right one, before I send my ambassador to his court to palaver about preliminaries for negotiating an exchange.

Many good, intelligent gardeners think they know this kind, although they have never seen it. Nurserymen are under the same delusion; therefore it might come to pass that "R. L.'s" plant is *Pelargonium diadematum rubescens*, which is the best of the two, and the mother of *Diadematum regium*. Individually the daughter has the advantages peculiar to the years of—what shall I say?—what you understand, perhaps, already, and, perhaps, would not "parse" if I said the words. If "R. L." will procure a dozen nice plants of *Diadematum bicolor*, and treat them in all respects like the *Golden Chain*, only to make a richer bed for them if possible, he might get such an opposition as would drive the *Golden Chain* out of the country. I do not say, or sanction that saying, however; but it has been "provisionally" entered on the "journal," from which we "post" into the "Chronicles of the Experimental Garden." D. BEATON.

THE LADY DOWN'S SEEDLING GRAPE.

IN reading over the pages of THE COTTAGE GARDENER for October the 14th, I find a correspondent, bearing the initials "H. M.," has made a few statements on the Grape Vine called *Lady Down's Seedling*.

On reading those statements I was induced to walk over to a neighbouring place, where it is growing and in cultivation, in order to ascertain from the gardener a few facts connected with its character that might assist those who do not know it in judging of its worth as a Grape for permanent use.

Here it is planted inside, and trained against the back-wall of a lean-to house. It has now upon it a crop of good-coloured and well-flavoured fruit. The colour of the fruit is a shining black, which is covered with a rich bloom, that gives it a noble appearance, and the flavour is between the *Black Hamburgh* and *West's St. Peter's*.

The size of the berry is not so large, nor do the bunches shoulder off so well as the *Black Hamburgh*; but it is a much more prolific bearer, although it is not so strong a grower as that kind. The gardener told me that he preferred it to the *West's St. Peter's*. In fact, he says it is equal, if not superior to any late Grape in cultivation. Its keeping properties are good. Last season it ripened its fruit the first week in September, and on January 22nd of the present year, when the last bunch was cut, the berries appeared as sound as in September.

I would observe that the atmosphere here is always surcharged with carbonic acid. Not less than nine large chimneys daily emit their volumes of smoke, which roll in clouds over the ground, scattering blackness and death in every part.—B. B., near *Halifax*.

PERILLA NANKINENSIS.

Will you allow me to call the attention of your readers to the merits of this annual as a bedding-plant, and as being particularly adapted to the now fashionable style of flower-gardening called the ribbon system?

It is, I believe, of comparatively recent introduction, and I do not recollect having seen it mentioned by any of your departmental writers or correspondents.

The chief merit of this singular plant consists in the colour of its foliage, being of a rich dark purple, or at least of the same colour as the darkest varieties of the Purple Beech. There is no beauty whatever in the flower, which is small and inconspicuous, and does not appear until late in the season.

The plant with me (on light land) grows about eighteen inches high, is of compact habit, and forms a small conical bush.

It is of easy cultivation. My method is to sow it in a seed-pan, placed in a slight hotbed, about the end of March; pot the seedlings singly when large enough to handle, and finally to plant them out about the same time as other bedding-out plants, viz., about the last week in May. It appears to possess a similar degree of hardiness as the

Dahlia, Heliotrope, &c., as I find that the same degree of autumnal frost which destroys them also proves fatal to the *Perilla*.

I obtained a few ripe seeds from it last year; but this present season I have not been able to obtain any. I trust that others may have been more successful, and that it will not be lost, as my impression is that it only requires to be better known to induce it to be extensively grown.

I will endeavour to describe to you the material of the ribbons, wherein the *Perilla* has constituted a rather conspicuous border with me.

They are on each side of a long, straight, gravel walk, ten feet wide, with a grass verge on each side three feet wide. Next to the grass,

1st line, *Lobelia ramosoides* (blue).

2nd line, *Calceolaria aureum multiflorum* (yellow).

3rd line, Variegated Geranium, Flower of the Day.

4th line, *Perilla Nankinensis* (dark purple).

5th line, White Dahlias, viz., Queen of the Whites, and Red Hybrid Perpetual Roses alternately. The Roses are all standards, two and a half feet high, the same height as the Dahlias.

6th line, dwarf hedge of *Fuchsia gracilis*.

7th line, Yew hedge, closely clipped, and four and a half feet high.—ZEPHYRUS.

P.S. I have now (31st October) a fine plant of the *Pumpas Grass* just coming into flower. I had it in a thumb-pot last May. I am afraid it will be too late to expand its flowers this season. Can you tell if you are aware of its having flowered this summer?

NOTES ON THE PLANTS AND GARDENING OF PERSIA.

The following are from Lady Shiel's entertaining volume on Persia.

The Persian Mahomedans have great reverence for some portions of the Christian revelation, and among these are the mother of our Saviour; hence "the tall White Lily is, in Persian, called the Goole Miriam, or Flower of Mary; and in a Persian painting representing the Annunciation, Lilies are growing round her.

"A thriving Persian village can generally supply a tenement by no means to be contemned. The principal room where the family resides is carpeted with felts; a high pile of bedding, tied into bundles, occupies one corner, while another corner contains chests or immense jars, such as the 'forty thieves' found a shelter in, filled with grain, Peas, or Beans. Strings of Apricots, Grapes, and Onions, far exceeding any produced in Spain or Portugal, hang in festoons from the ceiling; shelves are cut into the earthen walls, on which are placed stores of Quinces, Apples, Pears, and Melons, besides sundry cups and saucers, with, if possible, a few decanters and tumblers of coarse Russian glass, which form the pride of the family. One end of the room is occupied by a fireplace, over which are hung inscriptions containing quotations from the Koran, or from some of the Persian poets.

"The villages are surrounded with fruit-trees of every description, particularly White Mulberries, of which the Persians eat enormous quantities; indeed, their consumption of every kind of fruit is prodigious.

"The town of Gilpaëgan was in a more than ordinary state of decay. An impression was made on me of this place by a present of a camel-load—really an ass-load—of Roses. They had no stalks, and were tied up in a large cloth. As soon as it was untied the sweet perfume filled the whole tent, and attracted Frances, who sat down in the midst of the fragrant heap, and would have made a pretty picture with the Roses scattered on her head and lap. I am told that in this part of Persia, and in Kermanshah, Melon-fields are to be seen three or four miles in length, and a mile and a half in breadth. I really believe there is no exaggeration in the statement.

"The approach to the town of Ooroomëeya is highly picturesque; it is situated in a fine plain bearing the same name, with the mountains of Koordistan on one side and the lake on the other. The cultivation of this valley is very rich.

For twelve miles it is surrounded with gardens, intermingled with Melon-grounds, Cotton and Tobacco-fields: the latter, of high estimation for chibouk-smoking, is sent in large quantities to Constantinople; but for the kalia, or water-pipe, the tobacco of Sheeraz is the only thing tolerated in 'good society,' and is of a flavour and delicacy which would reconcile it to the regal olfactories of the first James himself.

"The Shah had in his service a first-rate English gardener, Mr. Burton, and with his help I astonished every one with the fineness of my Celery, Cauliflowers, &c., for these useful edibles occupied my mind more than flowers. Gardening in Persia is not an easy matter to bring to perfection. First there is the difficulty of making the gardeners do as they are told, and then twice every week the garden is flooded and the beds drowned. When the spring comes on and the sun gets strong and fierce, the beds dry up soon, and look like baked earth, cracked and dry, until the next water day, when they are changed into mud. The ground is covered with snow during January and February, so that March and April in spring, and October, November, and December in the autumn and beginning of winter, are the only months fit for the cultivation of a garden. The power of the sun in summer is so intense, that flowers blow and wither in a day. Roses come in about the 24th of April, and are out of season in Tehran by the middle of May. During that time they are in wonderful profusion, and are cultivated in fields as an object of trade to make rose-water; they are an inferior kind of Cabbage Rose. Persians are also fond of cultivating Tuberoses, Narcissus, and Tulips in water; still all their flowers are much inferior to ours, but while they last are superabundant. I got over some fine Hyacinths one year, and they attracted great admiration. Nearly all our garden flowers grow wild in Persia, but are small, and always single.

"The large garden attached to the mission, in which we perform our daily perambulations, was on the opposite side of the road or street; yet even for this short distance we were forced to submit to the tiresome etiquette of being attended by numerous servants. I never went out to drive with less than fifteen or twenty horsemen armed to the teeth; not that there was the remotest shadow of danger, for no country is safer than Persia, but that dignity so required. Yet this troublesome grandeur was trifling to the cavalcade of a Persian lady or gentleman of rank. Our garden was but a melancholy place of recreation: lugubrious rows of Cypress, the emblem of the graveyard in the East, crossed each other at right angles; and, to complete the picture, the deserted, neglected, little tombs of some of the children of former ministers occupied a prominent space, and filled one sometimes with gloomy forebodings. The gardeners of this spot, which, in spite of the above disadvantages, was invaluable to me, by an old custom of the mission, were always Gebrs of the ancient fire-worshipping native race. These people are most industrious, and struggle hard under oppression and bigotry to gain a subsistence. They dwell chiefly in the eastern province of Yezd, from whence they migrate annually in great numbers during spring, something like the Irish reapers and mowers of old; and before winter they assemble in the mission garden, and with their humble gains return in a body to their own province. In Tehran their abode is the mission garden, where I have sometimes seen 200 of this primitive people collected under the trees, where they live. The garden is recognised as their sanctuary and place of refuge, where no hand of violence molests them. They preserve a connection with their brethren the Parsees of Bombay, and it is on this account, in all likelihood, that their intercourse with us is so intimate. In these improving days of Persia this protection is less necessary than formerly, particularly as the present Prime Minister is a man of much humanity, and willing to befriend this hapless community, who, in their own province, suffer great hardships from the rapacity of governors and the bigotry of moollas. They are a simple, uneducated class, more rustic and uncouth in their appearance and manners than Mahomedan Persians of the same condition. Little or no information could be gained from them regarding their religion and customs. They said there was one great God that ruled everything, and that he had created numerous other gods or angels, who superintend the affairs of the world; there was a futurity of rewards and punishments;

and besides the God of Goodness there is another spirit who is the cause of sin. This, of course, was Ahriman. They denied emphatically that fire or light was regarded as God; but they affirmed that they considered it as a most sacred and holy representative of the Divinity and of his power. Compared with other Persians, the Gebrs are described to be a highly virtuous people, though oppression has made them crafty; and my experience of the manner in which my fattest Turkeys and best vegetables disappeared makes me certain that they are not much more honest than the rest of the nation.

"This garden was appropriated to other purposes. The 13th of the month Sefter is, from some reason which I have omitted to record, very ominous, particularly to any one who ventures to pass the day in a house. The whole town is consequently on foot, either in excursions or in sauntering about the few gardens in the dreary neighbourhood of Tehran. By ancient prescription our garden was devoted to the women of every rank who chose to make use of it, all males being carefully excluded, the Gebr gardeners excepted, who among Persian women are counted as nothing. The garden is occupied during the entire day by three or four hundred females—princesses, ladies, and others of inferior degree—who devote themselves to smoking, and eating Lettuces, Radishes, if they happen to be in season, or sweetmeats. The day never concludes without a battle royal, hand and tongue, between them and the Gebrs, who, strong in their dignity of gardeners to the Vezeer Mookhtar, as the foreign ministers are absurdly called,* are unable to tolerate the unblushing pilfering of plants, flowers, and fruit of these dames, headed by the princesses, who never fail to put to flight the 'fire-worshipping infidels.' That powerful ruler in the East Aadet—*custom*—has given the ladies of Tehran vested rights over her Majesty's garden one day in the year, which they stoutly maintain.

"May 27th.—We had to-day a specimen of the value of water in Persia. The two Gebr gardeners, with three Persian soldiers of the guard at the gate of the mission, rushed towards the room we were sitting in. One of the former had a large bunch of his beard in his hand, which he stretched out at arm's length. One of the soldiers held a handkerchief to his mouth, as if indicating the loss of a tooth, and all had their shirts and inner vests torn open at the neck, which among Persians is an unfailing sign of woe, as among the Israelites of old. The Gebrs are a stolid, immovable race, but this was an opportunity for emotion not to be neglected. The Father of the beard, as an Arab would say, Ardesheer, was spokesman: 'Kooshteh shudem, moordem! —I am killed, I am dead! Is this the way to treat the Vezeer e Mookhtar's gardener?' &c. Tehran is dependent for its supply of water in part on wells, of which the water is exceedingly bad and unwholesome, and in part on various kanats which have been conducted into the city. Two days and two nights of each week are allotted for supplying the extensive gardens and premises of the mission with water from one of these kanats. But as the stream enters on the north side of the city, while we resided exactly at the south side, it has to pass through the ordeal of a mile and a half among thirsty Tehranees before it reaches the mission. It is consequently necessary to station guards at intervals to watch its safe progress through the town. All sorts of schemes are in request to waylay the water. When a watchman is absent, or remiss, or bribed, the stream is turned out of its course, and every one helps himself or fills his cistern. At another time everything seems correct; no impediment occurs to the water, yet none of it reaches the mission. The cunning Iranees have bored channels underground from their houses to the stream, and thus purloined nearly the whole of the water. Knowing the urgent wants of the citizens, these peculations would have been overlooked; but very often, as in the present instance, the theft was supported by main force, leading to blows and a battle, in which the mission guards and servants, being the weaker party, generally fared ill. Then followed demands for punishment, in

exactness which it was necessary to be pertinacious, if only to save her Majesty's mission from dying of thirst."

STUPEFYING BEES WITH CHLOROFORM.

WHILE the practicability of stupefying bees is now generally known, the method of administering it is not, I find, so universally understood. That none of your readers may remain ignorant on this point, so pregnant with humanity to bees, I feel desirous to make known the system I pursue. Towards dusk saturate with three tea-spoonsful of chloroform a piece of sponge not larger than an egg, place the sponge within the hive to be stupefied, close the entrance with a handkerchief or anything handy; in a few minutes a murmur will be heard, which gradually increases until it becomes a roar. This, again, gradually subsides until all is quiet and still. At this stage tap the hive, that the bees may fall from among the combs. Let matters remain as they are for ten minutes, then lift the hive, and you have the bees all prostrate on the board. Should any yet remain among the combs, and not to be knocked down by tapping, replace the hive until they are. The queen will be found nine times out of ten lying on the top: she seems to be the last to fall. Place an eke around them, and when they begin to show signs of returning animation sprinkle them freely with honey, or a strong syrup of sugar and water; lift the hive with which they are to be united, set it over them, resting on the eke; previously, however, remove the stupefied queen, to save fighting. The bees above, attracted by the scent, will descend, and lick their sweetened, slumbering brethren; while they, as vitality returns, ascend, and with their new-found queen and fellows dwell in peace and unity.

In the morning remove the eke, and restore matters to their pristine state. Although the season is advanced, it is not too late, in cases of emergency, thus to unite bees; and it will be to the advantage of every apiarian who may have light or weak hives in his apiary to unite them with stronger and heavier ones. One strong hive is worth three weak ones.—D. G. McLELLAN.

CHLOROFORMING BEES.—TAYLOR'S HIVE.

It pleases me mightily, the thought that I have been in some degree the means of arousing the slumbering genius of the West. This thought pleases me, I say, notwithstanding that that awakening is accompanied by signs and omens well fitted to make the souls even of stout-hearted men to quake and fail within them, for straightway he cries, "A tilt! a tilt! Oh, who will tilt with me?" Erstwhile inhaling copious draughts of ether (not chloroform), his stature towering, he runs a tilt with me. Alas, poor me and all before him! And shall I tilt with him? the prize so great, the danger so tremendous, if faith so will not I. I am not bold enough to meet within the lists a denizen of that classic spot where jousts and tourneys have become as household words since Eglington did gather there his knights and squires, and dames, and ladies fair, his "beauty and his chivalry." Yet stay, I do bethink me. The tournament was but a sportive jest—a thing of fun and frolic. This, then, to which him of the western ilk now defies me, may be of a kindred stamp. So, Mr. Wilson, there is my glove. And, first, for chloroform. It is no new thing for me to listen to tirades against the application of chloroform to bees; but these have generally proceeded from the lips of those apiarians who follow a certain system simply because it was the custom of their grandfathers, and with whom novelty and everything subversive of rule and order are held to be synonymous. I do not say my learned friend belongs to this Adamic or Methuselan class; he merely runs a risk of being so considered. Chloroform is a great discovery of modern date, and it has abundantly experienced the cruel treatment such things invariably receive. Scoffs and sneers, the twin offspring of blind prejudice, are the heralds of their advent. If it were needed, I believe that Mr. Beaton will soon be able to give confirmatory testimony to this, for it cannot be that that discovery of his, touching the propagation of Geraniums, will be an exception to the rule, and

* "This name, so full of false pretension, was introduced by the Russians, and for no good motive. The word 'vezeer,' they said, implied 'minister,' consequently they were vezeers. It certainly does mean minister, but only a minister of state, which a minister plenipotentiary is not. Thus a spurious consequence is acquired, which the English have been forced to partake in self-defence."

not encounter many Mr. Wilsons, who will pooh, pooh it, and never even try it. Mr. Wilson has such an abhorrence of the drug, that I feel quite warranted in inferring that he has never used it. No, he knows another plan by which bees may be transferred without the use of any such abominable stuffs, and so do I; but I cannot allow him to award the palm to *that* until he has qualified himself to be a judge, as I have done, by operating in both; and, on the other hand, I will not determine whether or not the bees have more or less *affinity* or relish for that *reversing* and *rotating* operation than for chloroform. If I mistake not, the plan preferred by Mr. Wilson will be found described in Dr. Bevan's book.

Now for Mr. Taylor's hive. When speaking of it, labouring to be concise, I have rendered myself obscure and open to the charge of mismanagement. So be it; but my mismanagement did not proceed from ignorance of the alternative mentioned by Mr. Wilson. When one works a box or hive with a view of testing its efficiency, unless he follows strictly the directions of its inventor, he does not test it fairly. The giving of additional room *below* forms no part of Mr. Taylor's plan. He says, "Should the bees have pretty well filled the first super, another may be introduced between this and the stock." This is what I did after a keen mental struggle between what I knew was right and Mr. Taylor's rule, and the result is known. Had I allowed the other rule to win, and given the room below, it would have been no trial of Mr. Taylor's hive. I was grievously annoyed with the result; yet I would not utterly condemn that kind of hive without some further trials. I frankly admit that management is important, most important; but none, even as perfect as it is at Stewarton, can make amends for unpropitious seasons, and none know this better than they do, else the experience of this year must go for nothing. A gentleman in Glasgow who deals largely in honey told me that whereas, in the month of August last year, he had in his stock fifty boxes of Stewarton honey, this year, the same month, he had only seven. In consequence of the south of England rejoicing in better seasons, and, I may add, superior pasturage, Mr. Wilson thinks the collateral system may suit well there.

If this theory is correct, then the storifying plan ought to be the best for Ratherglen, and the collateral for Stewarton; for I can make no comparison between the two districts unless I were to say the last is as Eden *before* the fall, the former as Eden *after* it; and yet I have found the collateral (not this year only, but every year) has always yielded me the most honey. I have wrought hives on both plans *long*: has Mr. Wilson *ever*?

If I had said that I had succeeded in getting my glasses filled *always* without brood, I should have said a great deal more than my experience warrants; but if I am spared to see another season, I shall be able to promulgate a wrinkle there anent, and to tell Mr. Wilson how to accomplish it without the aid of miracles. I have been now three years experimenting on this very point, and I think I have found the secret; next year will decide.

One word more, and then I have done. Mr. Wilson enters a verdict of guilty against himself of making free with me. I am quite willing to allow its justice—his sentence shall be light. Ample amends he will make for all the blows he thinks he dealt me if he will, out of compassion for the ignorance of all writers upon the bee, past, present, and, mayhap, to come, allow some of his pent-up knowledge to escape by means of the "safety-valve" now open, to the end that wisdom may not die with him, and be entombed within the charnel-house of all the Wilsons.—D. G. McLELLAN.

CHEAP GAS-HEATING APPARATUS.

I WILL now proceed to give you, in accordance with your desire, some remarks as to my mode of heating a small greenhouse. I must precede them, however, by stating, that in all my experiments I have aimed at *cheapness* and *portability*.

The greatest advantages the mode offers are the facts that it requires no expensive brick fixing, that it can easily be moved and adapted to another greenhouse in case of re-

mova; it is clean, can be set in action in a moment, and is easily regulated even by a lady, and, where there is gas, may be kept for any time at a comparatively small cost, when the great expense and trouble of the old mode is considered. There is no risk with gas of losing your plants in consequence of the fires going out, and no time lost in attending to them, so that I consider the balance of expense in favour of gas. This, then, is my plan annexed.

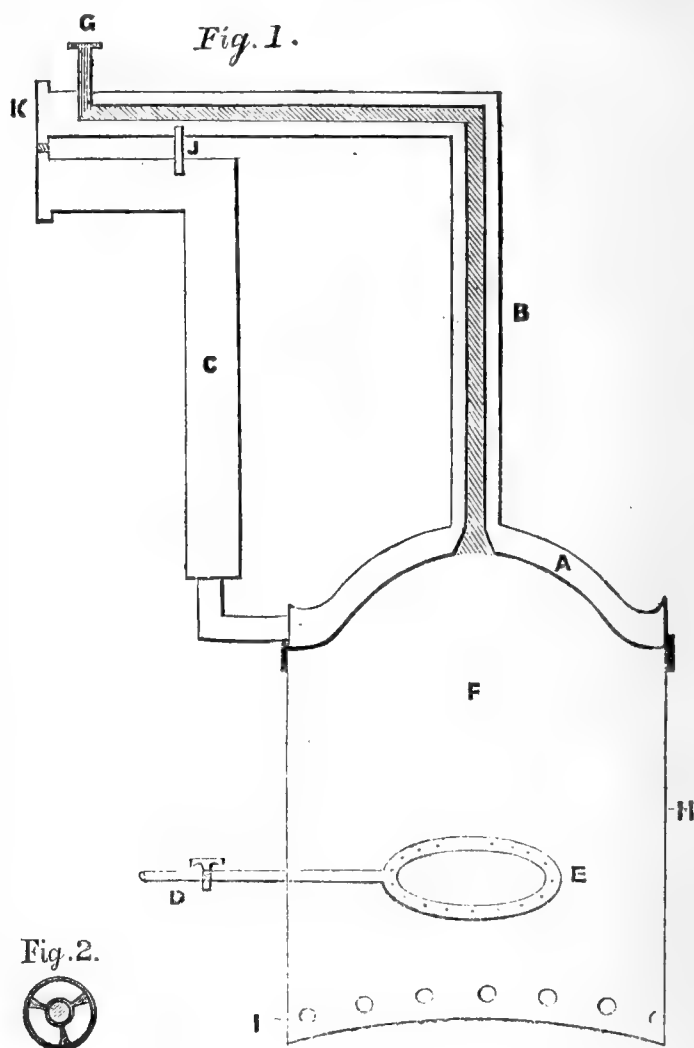


Fig. 1. Sectional view.

Fig. 2. Inner tube, kept in centre by stays.

Fig. 1 is a sectional view of an apparatus in a cellar, from which the pipes are led to the greenhouse. A is the boiler, composed of two galvanised iron bowls, which may be bought for 1s. 6d. each, and which are soldered together an inch apart by means of a circular ring of, No. 11, zinc. B is a flow-pipe, with G, a small tube (an inch clear) running through a good part of its length, and communicating as a chimney with the hot-air chamber F. C, return-pipe, galvanised iron, on No. 11, zinc, three inches in diameter, and connected to boiler E. Ring-burner to be bought for 1s. 3d. H, circular tube of sheet iron, same size as outer edge of boiler, and made to take away. There must be a small swing-door for lighting gas. I are holes at bottom for admission of air. J, stay from one pipe to another. K, union joints. These union joints can be in any part of the return-pipe, but can only be beyond the chimney on the flow-pipe. As a matter of course, the farther this inner tube goes through the flow-pipe, the greater afterwards is the facility for heating rapidly. In my apparatus it goes through it for ten feet, and is then taken out of the house; but were I to have one *fixed* permanently, I would have it continued all through the flow, and finally coiled round in a retort or cistern at the highest point. For some time after heating there can be no heat felt issuing from the tube G, proving that the cold water is abstracting *all* the heat. When the water becomes heated, then the warm air escapes; but, by lowering the burner, and a little attention at first to test its capacity, I think the loss of heat can be brought very low.

Fig. 2 is a section of the flow-pipe, showing how the inch tube is retained by stays in its place within it.

On the form of boilers for this purpose, and to show the actual small cost, I will, if required, give some further directions.—VINCENT LITCHFIELD.

PLEUROTHALLIS SMITHIANA.



RECEIVED from R. A. Gray, Esq., F.H.S., in 1845.

This Orchid deserves to be recorded as exhibiting a material departure from the structure originally observed in it. The lip is distinctly 3-lobed, with the two lateral lobes considerably prolonged; while in the original the lip was nearly entire, the lateral lobes being hardly distinguishable. In all other respects the plants appear to be identical.

The accompanying figure represents the plant of its natural size, with the column, lip, and petals (a) magnified.

This little plant requires to be grown in the Orchid-house, and is best kept in a well-drained pot, and planted in fibre formed out of peat and half-decayed leaves. It requires plenty of light and moisture when growing, but afterwards to be kept rather dry and cool.

It has no beauty, but is very curious and neat in appearance.—(*Horticultural Society's Journal*.)

PLUNGING FRUIT-TREES IN POTS.

In thanking Mr. Rivers for his polite estimate of my opinions (p. 61), permit me to say that I spoke not of trees when in-doors, but simply those in a rest-state out of doors. I have known so much mischief accrue through having their roots exposed, that I feel it a duty to urge the plunging (on high and dry ground) to all within my reach. I not only consider it requisite in winter, but in summer, albeit for different reasons; and even in-doors I feel persuaded of the benefits derivable.

Mr. Rivers points to the advantages obtained by allowing the heated air to come in contact with the roots; but, supposing he were correct in that assertion, does he not admit, at the same time, that the roots are liable to those extreme depressions of temperature to which even closed houses are subject on many nights through the year? Surely we may not take the liberty of ignoring or running counter to Nature without a sound reason for so doing. What good gardener would not prefer a permanent bottom, or root-heat, of 83° to his Pines, Melons, and Cucumbers also, to one fluctuating between 55° and 85°?

Thus much by way of comparison, and as referring to what takes place in Nature. But Mr. Rivers builds his argument on a basis which, if generally admitted in all sublunary things, would prove a most serious barrier to progress. He says, speaking of not plunging Peach-pots, "And I fully believe that I shall not again. My trees unplunged give fine crops, and are now in the finest of health," &c. Again, further down in his paper, "My success is quite perfect, and so, in spite of the doctors (who are they?) recommending their specifics, I am more than ever inclined to leave well alone." Now, one man may affirm that he has capital success in Hamburgh Grape growing, and that, feeling safe in his isolated opinion, he will let well alone; in other words, will never more attempt progress; whilst, at the same time, the crops of some other growers might fairly astonish him could he witness them, and shake his former opinions to their very foundation. This settling down in opinions, not of a surety based on principles, is not wholesome; but it is an error to which men of middle age are rather liable, especially if they have devoted a great portion of their life to a close observation and investigation of facts bearing on any given point. The latter is Mr. Rivers' case, and I should have passed by the matter, probably, as trivial in other hands. I hope Mr. Rivers will take these remarks in a courteous spirit, as intended; for, although courtesy should not be permitted to warp truth, it ought, at least, to accompany the enunciation of it, especially when, of necessity, it clashes against the opinions of men of high standing in their profession.—ROBERT ERRINGTON.

GOLD FISH, THEIR HABITS AND AILMENTS.

IN THE COTTAGE GARDENER for the 7th of October I saw a note from "Z. Z. Z.," requesting information concerning Gold Fish, and followed by one from yourself asking a reply. Now, I imagine I understand his case, having observed one which appears to me somewhat parallel. I have the charge of the aquatic-house here (Dalkeith Palace), in the tank of which are kept some of these fish, and have had an opportunity of watching them during the summer. On the 1st of April the tank, which is twenty feet by sixteen feet, was filled with water, and five fishes were put in, three black and two yellow (the black ones have since become yellow). There were, at the same time, a few *Nymphaeas* planted in it, and other plants were placed in the water in pots, such as *Caladiums*, *Papyrus*, &c. In the centre was put a mound of earth for a *Victoria*, and covered over with very rough white sand. About the end of May or 1st of June I observed the fish often chasing each other furiously through the tank, and this continued for at least a month. About the same time were observed numbers of diminutive fishes, no longer than a quarter of an inch, swarming in every part of the tank, which showed that the fish had spawned, and, as I believed, were continuing to spawn; and, although I did not see the spawn, I believe that the sand-bank in the centre was the place where it was deposited.

I attribute the attacks of the fish on each other at this

period to the jealousy of the males, as all those onsets have ceased long ago, and they now seem quiet and sluggish. In the course of some weeks the tank got more crowded, and the young ones got larger. Some of them are now like minnows, but a great number are still very small. I often have occasion to go into the tank bare-footed, when they will always assemble round, and nibble and pull the hairs on my legs, seemingly in want of something to eat. The tank is supplied with water by a lead pipe coming from a cistern, which is kept full by a pump; the water is, consequently, free from any vegetable or animal existence before it reaches the tank, so that the whole shoal have to depend upon what they find in it for food. The change of water, which is effected by running off a quantity two or three times a week, and by waste in watering plants out of it, brings them no food; and, as they have no food given them at any time except by accident or for amusement, this cruel want is showing itself on them. The old ones, though seemingly healthy, do not grow, neither do the young ones; and the numbers of the latter are evidently decreasing. A few small ones which were removed to a larger tank, where they can find more food, have far outstripped the others in growth.

The cause of the decrease in number among the small ones is, in a great measure, occasioned by cannibalism, for I have sometimes found one or two lying dead on the surface of the water, with their tails eaten off and otherwise mutilated; and I have seen the big ones feeding on them. In one instance I observed an old one attacking a rather large young one, which was disabled and exhausted, and there could be no doubt of the pursuer's intention. They eat the tender leaves of the *Victoria*, the *Nymphaeas*, and the roots of the *Papyrus* and other plants; but what they like best are insects or worms. I frequently wash plants infested with mealy bug in the tank with the syringe, when they catch the bug as it falls on the water. They are also fond of ants; but their greatest treat is a handful of worms, which I sometimes gather for them in the soil of an old hotbed which was used for Celery. Two will sometimes catch the ends of the same worm, and pull and struggle which shall have it.

I have never known them to attack each other in glasses, although they are, in general, far from being properly fed in such vessels. I know five which have been in the same glass for upwards of two years, and they have had no other food but a few crumbs of bread given them every time the water is changed, which is twice or thrice a week (the water comes from a pond in the fields). They seem healthy, but they have not grown all that time, which they ought to have done had they been properly fed. How fast do the fish grow, and how large do they get in those ponds about manufacturing towns which are partially supplied with warm water from an engine, and where they can gather food for themselves!

I would here suggest a very simple plan, which has struck me would answer well for keeping up a supply of natural food for them during the summer months, namely, to get a dead rabbit or fowl, and allow it to go to maggots in a box in the open air, as the game-keepers do to get food for their young pheasants, taking care to provide a succession as gardeners do salading. Fresh meat cooked and chopped fine would answer best when maggots could not be had. I have kept a few little fishes, called, in the north of Scotland, "*Banstickle*," in a vase, and fed them in summer on the maggots which are always to be found in toadstools and mushrooms growing wild; but these are not always to be got in sufficient quantity in every locality.

I shall be glad if "*Z. Z. Z.*" can find a hint in what I have said enabling him to explain his own grievance, and how to prevent it for the future. I should be obliged if you would tell me whether Gold Fish are a distinct species, or merely a variety of a species. My reason for this inquiry is, that the fish here change colour at every stage of growth and at every age. They appear to come black at first from the ova; they then change, some of them when scarcely an inch long, some of them silvery, but most of them yellow. There are some in the large tank nearly as large as the old ones, which are still quite black; and I think it possible that some of them may not change colour at all. I, indeed, know three which are, at least, from two to three years old, and are still quite black; but they are in glasses.—A YOUNG GARDENER, *Dalkeith*.

[Gold and Silver Fish are distinct kinds, belonging to the same Natural Order as the Carp. The Gold Fish is *Cyprinus auratus*. When young it is very dark coloured, and this changes to the golden-red hue earlier or later, according to the vigour of the animal. The young Silver Fish is never so dark coloured as the young Gold Fish. They are natives of China, and introduced here as far back as 1691. They have become naturalised in some of the streams in Portugal, and are imported thence annually to supply our vases.—ED. C. G.]

QUERIES AND ANSWERS.

EARLY FLOWERS FOR GEOMETRICAL BEDS.

"Could you inform me what to plant in a small geometrical flower-plot that would flower in spring, so that I could plant the beds with half-hardy annuals, &c., in June? I have no glass accommodation, but a 'five-pound greenhouse' heated by a brick stove.—A YOUNG BEGINNER."

[You are too late now. The best things for you would be hardy annuals, to be sown early in September, and to be transplanted in February, but to have a quantity of *Wall-flowers* from a May sowing, to keep the beds green and well furnished from October till the annuals were to be planted in February; then to distribute the *Wallflowers*, keeping only enough "to centre" and "corner" the geometric beds with, filling the rest of the space with the annuals. Such as *Silenes*, *Clarkias*, *Nemophilas*, *Limnanthes*, *Gilias*, and *Collinsias* would be the best kinds for you. All the chance you have now is to aspire, or conspire, with some friends to excel the Crystal Palace people with spring bulbs. Use *Van Thols*, *Rex rubrorum*, *Royal Standards*, and such kinds of early Tulips, and as many dwarf yellow kinds as you can lay your hands on in a honest way. The *Scarlet Turban Ranunculus*, put in now, will look very gay; *Hyacinths* ditto, *Pheasant's-eye Narcissus*, and *Polyanthus narcissus* of sorts; and, above all, plenty of edgings to all your spring beds, of *Crocuses* and *Scillas*, or *Squills*; all sorts of border *Polyanthuses* and *Auriculas*, the "flowers of our childhood;" a nice bed of *Doronicum Austriacum*; another of the yellow *Alyssum*; one of the variegated ditto; lots and lots of *Aubrietia purpurea*, *Arabis verna*, *Double Wood Anemone*, and all other *Anemones* that you can pick up; of *Ranunculuses* the same. *R. amplexicaulis* is the best March white flower we have; the double yellow one the best of all later in the spring; but you must wait a while for it, as most likely it is not in the trade, or rather, now, for it is a very old plant.]

MARCH AND MAY FLOWERS FOR A GRAVE.

"What bulbs or flowers would best suit to plant over a grave, so as to be in full bloom about the 10th of March, and also the 10th of May? and what is the most appropriate form to plant for such an occasion or anniversaries?—A CONSTANT READER."

[No suitable arrangement could be depended on to answer for a certain week. For particular periods of that kind you will have to purchase for the occasion when the months arrive. Avoid blue and yellow flowers. White flowers are best; and white flowers drooping, as the *Snow-drop* and *Snowflake*, best of all. Every white *Narcissus* is also very suitable.]

AMATEUR COW-KEEPING.

"I, with two others (neighbours); am thinking of keeping a cow, for the purpose of providing ourselves with good and pure milk. The expense, I presume, of putting it out to graze, and having a man to milk it, &c., would be about 9s. or 10s. a week, possibly under that sum. We reside, all of us, at Lee, Kent. My milk bill comes to upwards of 5s. a week regularly, and is not likely to be less. One of my neighbours is in the same melancholy plight, and my third friend thinks he pays more than he ought for the manufactured article, added to which he cannot for love or money—of which latter commodity he has, however, his

share and ours too—he cannot, I say, get the article in its primitive and genuine state; no, not even when he sends his compliments to his milkman, and requests him, for the sake of his custards, which he is about to come out strongly with for the peculiar pleasure and gratification of his welcome and hungry guests, to send him the veritable article, and not the vile and stinking compound. Now, Sir, we shall be obliged to you for your advice on the step which we contemplate. Firstly, how about the cow? What breed do you recommend? She will be, probably, under our very eyes, and she should, therefore, be a well-conducted cow; for there is, you know, Sir, a time for everything. Then, again, how much milk can we reckon upon daily throughout the year without the brains and plaster of Paris? and do you, Sir, upon the whole, think our proposal free from objection? Your opinion and advice on the above several points will oblige—H. C. L.”

[We fully sympathise with you in your desire for good milk, and we know, from experience, that it is as much to be coveted that every patriarch should enjoy the milk of his own cow as it was in eastern climes that he should live under the shade of his own vine. There are, however, one or two difficulties. In the first place, *one* cow will not give an uninterrupted supply—she must be allowed to be dry; that is, not to yield milk for some weeks before her calving time. Two cows, calving in different months, are required; and if two are kept they, at certain times, may forget that decorum that ought to be regarded by cows pastured on lawns. If you carry out your intention, we recommend the small black Welch cows—they are good milkers, and yet carry flesh so as to be creditable in appearance. A cow, on an average, will give daily eight quarts of milk.]

COMPOST FOR RHODODENDRONS.

“I must tell you our soil is clay, for the borders we have dug out and “made” them. All bedding-plants do well; but I have a quantity of *Rhododendrons* which have not made the least growth. I presume they must have peat, or ought to have it. Now, this would be very inconvenient to me where I reside. I have plenty of leaf-mould, yellow loam, and as much sand as I please. Could not some compost be made that these same *Rhododendrons* would thrive in? I am rather wishful to form a group of them to shut out a part of the kitchen-garden, and have thought of forming something with stumps of trees; would that do for them?—E. P. T.”

[One half friable, but strong yellow loam, and one half rotten leaf-mould, ought to be, next to peat, the best compost for a bed of *Rhododendrons*; but, in practice, this rule has two exceptions. In such a bed, over chalk, *Rhododendrons* die by inches. If they are over loose sand or gravel it is nearly as bad; but a thick mulching of moss—nothing less mulchy will do—is a good practice. In clayey ground like yours that compost ought to grow *Rhododendrons* to perfection; still, that depends on the kind of yellow loam. You must give up the idea of hiding out a view by raising them above the surface as you propose; if your beds are even one foot higher in the centre than the level of the ground you run a chance of defeating your aim.]

BALSAM SEED.

“Will you be good enough to inform me if the *Balsam seed* grown at Shrubland Park, as described by Mr. Beaton, can be purchased?—THOMAS.”

[All varieties of the garden *Balsam* make but one *kind* of plant; the difference is in the flowers. A bad kind, and the very worst kind in England, Ireland, and Scotland, can be grown just as well as the best was at Shrubland Park. In 1834 Mr. Hay Brown had six dozen of better-grown *Balsams* than those at Stoke Edith Park, near Hereford, all at one time; and a couple or so as good may be seen almost anywhere fifty miles from London. Cultivation makes the chief difference.]

SHRUBS FOR A GRAVE.—WHITE, BLUE, AND SCARLET VERBENAS.

“Will you be kind enough to inform me what sorts of low-growing Shrubs would be best to plant for a grave, to stand through the winter, to be removed in the spring, to make room for summer flowering-plants? I was thinking about having some in pots to plunge. Would you recommend that?—A CONSTANT READER.

“P.S.—I should be glad if you would inform me which is the best white, and blue, and scarlet *Verbena* for bedding purposes, and also a good purple *Petunia* for bedding.”

[Small *Yews* and *Box*, without pots, are best for graves. The best white *Verbena* is the one which suits your soil best. *Mont Blanc* is usually our best white, and *Robinson's Defiance* is our best scarlet. There is no blue *Verbena* yet; but *Blue Bonnet* is as good as any of the dark grey ones, and these are the nearest to blue. *Devoniensis* and *Prince Albert* are good purple *Petunias*.]

GOOSEBERRIES.—CLIMBERS FOR EAST WALL.

“Will you kindly answer the queries below?

“1. Which is the *earliest* dessert Gooseberry?

“2. Which is the *latest* dessert Gooseberry?

“3. What varieties of Gooseberries are best for a general crop?

“4. What Climbers would you recommend for the east end of a house in the north of Staffordshire?—H. ROLLISON.”

[The earliest Gooseberries are—*Golden Drop*, yellow.* *Green Gage* or *Early Green Hairy*. *Tiger*, early red. *Whitesmith*, early white. The latest are—*Coe's Late Red*. *Wandering Girl*, late white.* *Thumper*, late green. *Viper*, late yellow. Those marked * are the best flavoured.

For a general crop choose *Champagne*, red. *Champagne*, yellow. *Old Rough Red*, for preserving. *Warrington*, for preserving, and protecting with mats for late use. See Mr. Appleby's instructions and lists for further information.

With regard to *Climbers* for an east wall in your locality, you would not be far wrong in ordering the following:—*Clematis montana*, very hardy; *Clematis flammula*, sweet-scented; and *White Jasmine*. If there is a fire inside the house in winter, plant a *Magnolia grandiflora* in the centre. If the end of the house is spacious you might add the following climbing *Roses*:—*Williams' New Evergreen*, creamy white, the flower borne in large racemes. *Crimson Boursalt*, bright purplish crimson; very free. *Myrianthes*, delicate rose and white clusters; very fine and large. *Ruga* (Ayrshire) white, large, and sweet.]

BEEES DYING LEAVING HONEY.

Without knowing the previous condition of “AN OLD SUBSCRIBER'S” stocks, which died last winter, though “well-provided with honey,” we cannot state with certainty the cause. Such, however, is not an unusual occurrence in the way stated. “Not a single living bee was left, and, though some dead ones were found, yet there were not enough to account for the loss.” The common opinion that the unfruitfulness of the queens is the cause of such can hardly be applied in this case, three or four stocks being defunct. We suspect the bees got weak in autumn, probably by repeated swarming, and many of the bees left were of equal ages, and not in sufficient numbers to cover the combs, especially in severe weather, by which the pollen would be rendered unfit food for the larva; nor would there be heat enough for their growth, to fill the places of bees gradually dying off.

Wasps are rather shy of entering very strong hives, but when they are about it is a good plan to reduce the size of the doorways, and thus afford the bees better means to defend themselves. But when wasps attack hives by wholesale, the better way is to close the entrances at night for a day or two, except a little for air, and let the bees slaughter the intruders; but if these are likely to be masters, as in the present case, “wasps being almost more numerous than the bees,” destroy the whole, and take the treasure.—J. WIGHTON.

TO CORRESPONDENTS.

TULIPS (*Joshua Phelps*).—We know of no descriptive catalogue of these flowers.

W. B., about heating, and **AN OLD SUBSCRIBER IN SCOTLAND**, will be attended to next week.

LIST OF FRUITS (*R. M., Acre Lane*).—We can give you none better than those in Mr. Adams's advertisement last week.

WORK ON VINE CULTURE (*Leonora*).—Mr. Sanders's pamphlet on "The culture of the Vine," and published by Messrs. Reeve and Benham, would be your young gardener's best guide. You are quite right as to *Athyrium filix-femina* being the Lady Fern, and you will find we so stated in our description of it in our 15th vol., page 157. At page 57 of our present volume we merely give a literal translation of the specific name *thelypteris*.

WEIGHT OF MANURE (*A Market Gardener*).—Any calculation of weight founded on a measurement of the heap must be uncertain, as it varies greatly with the solidity. A cubic yard of well-made and turned stable-manure weighs usually about 14 cwt. Your heap, therefore, will weigh $\frac{1}{2}$ of nine tons and three quarters.

OBSCURITY (*W. X. W.*).—What do you mean by something of a neat appearance, and also valuable? Is it flower-beds, or Rose-beds, or is it valuable for the table you mean? Then would not raised banks of Strawberries look very pretty, or small pyramidal trees of Pears, Apples, Cherries, &c., look very nice and neat? Let us know what you chiefly want in the flower or fruit way, and repeat the space (for we shall forget all that), and you will have our best attention. You will see next week what Mr. Fish says about your Cucumber-house.

VARIOUS (*Rev. E. H. Cole*).—The *Araucaria imbricata* will move quite safe, and now is the time. Prune the Beech-tree considerably next February, fork up the soil as far as the roots go, and put a layer of some loose mulching over it; also, in dry, hot weather, water it abundantly, and it will soon recover. Common salt and other salts, and all such active stimulants, should only be applied when the crop is in active growth. Buy "Allotment Gardening for the Many," it is only 3d., and gives monthly directions. We have often tried to obtain accurate information about *Pig feeding*, but have never succeeded. When so many queries come together we are compelled to be brief.

WORM-CASTS ON LAWNS (*A. Z.*).—Frequent waterings with strong lime-water is the best remedy. *Asphalt walks*, well made, are better than gravel, being drier, and never producing weeds.

NAME OF PLANT (*H. H. Darke*).—It is the *Veronica Andersonii*, and is easily propagated by cuttings of the young shoots.

POTATOES FOR PLANTING (*James Date*).—Neither the young Potatoes nor the old Potatoes producing them are desirable for seed. The plants produced from them must be weak. *Toads* are not venomous. They could not bite a child, even if its little finger was put into their mouth. *Roots of Mangold*, to produce seed, should be selected from those which are longest, heaviest, and least topped.

GOOSEBERRIES (*C. G. D.*).—Any nurserymen at Manchester or Sheffield could supply the varieties you name. Any nurserymen advertising in our columns that he could supply all the best would find many customers.

CINERARIA LEAVES CURLING (*A Subscriber*).—The curling of the leaves of your Cinerarias may arise from various causes. You have had them *all the summer* in a low, cool house facing the sun. That situation must, through that season, have been very warm, and you must have kept them well supplied with water, and shifted them frequently, and that management has caused gross growth, and induced them to make such fine plants, with from ten to twenty flower-stems. In moving them into an airy greenhouse, though cool, the evaporation from the leaves in such a dry atmosphere would be sufficient to cause the edges of the leaves to turn up. The remedy will be to syringe the plants every evening for a fortnight, and keep them moderately watered. It is possible that the curling may have been caused by the green fly. If that is so, and the insects are yet on the plants, then the remedy will be filling the house with tobacco-smoke, not too strong, being careful not to allow the tobacco to break out into a flame, for that would cause the leaves to curl with a vengeance. Another cause may be, that the plants have exhausted all the nutriment in the soil. The remedy in that case will be that of watering them with weak liquid-manure every third time. Exercise your judgment, and, when you have determined the cause of the disease, apply the proper remedy. We should be glad to hear that it has succeeded.

WIREWORMS (*An Old Subscriber, Colyton*).—They are *not* Wireworms, but Snake Milipedes (*Julus terrestris*). They feed on decayed vegetable matter.

LAYING-OUT BEDS (*A Constant Reader*).—We regret that we cannot do as you ask. We have many times publicly declined either to give designs or to recommend plants for designs. No one justly can do so without first seeing the place. When a proposed arrangement is placed before us we do not object to criticise it.

HEATING WITH HOT WATER (*Nugent*).—You cannot do better than consult Messrs. Weeks and Co., as you propose. They are accustomed to the extensive heating of such structures.

BOYD'S SCYTHES (*F. P.*).—There is no doubt about their superiority. Our gardener uses no other.

BOOK ON STOVE PLANTS (*Mr. Belgrave*).—There is no good work on the separate culture either of stove or greenhouse plants or Orchids.

BETTER INJURING THE SCOTCH FIE (*J. C.—Thornwood Lodge*).—It is the Scotch Pine Bark Beetle (*Hylesinus piniperda*). No remedy is known. We should cut off all affected shoots and burn them.

PILLAR ROSES (*A. B. C.*).—We shall publish a paper on these before long.

ANNUALS FOR RIBBONS (*A Beginner*).—There is nothing among all our Annuals that will suit your scheme at all; the thing has been tried often and again, and as the truth is better than gold, it is best not to deceive, as those do who write about arrangements they neither practise nor understand. Such capital ideas cannot be carried out so cheaply. To your second question, *Saponaria Calabrica* will not "do" as an edging without spoiling it; but *Sanvitalia* is much like it in growth and strength, and we have no more to suit either of them. It is useless to sow Hollyhock seed now. *Oenothera riparia* is the other name you inquire for.

NAMES OF PLANTS (*Rusticus A. B.*).—We think your Tomato is a variety of the *Solanum cerasiforme*. (*H. Peacock*).—Your Ferns are mere seedlings. 1 and 5 are probably *Lastræa spinulosa*; 2, 3, and 4, probably *Lastræa filix-mas*. (*Thomas Joy*).—Your Fern is *Athyrium filix-femina*. (*R. R.*).—1. *Erica cinerea*. 2. *Erica vulgaris*, now called *Calluna vulgaris*. 3. *Erica tetralix*. 4. The Fern is *Asplenium adnigrum*.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

BIRMINGHAM. December 2nd, 3rd, 4th, and 5th. Sec., J. Morgan, jun., Esq. Entries close November 1st.

CRYSTAL PALACE. January 10th, 12th, 13th, and 14th. Grand Exhibition of Poultry, Pigeons, and Rabbits. Secretary to the Poultry Exhibition, William Houghton, Esq., The Sands, Runfold, near Farnham, Surrey. Entries close December 13th.

ESSEX. At Colchester, 8th, 9th, and 10th of January, 1857. Secs., G. E. Attwood, and W. A. Warwick.

GLOUCESTERSHIRE. Nov. 26th and 27th. Sec., E. Trinder, Esq., Cirencester. Entries close Nov. 1st.

NOTTINGHAMSHIRE. At Southwell, December 17th and 18th, 1856. Sec., Richard Hawksley, jun. Entries close November 19th.

NOTTINGHAM CENTRAL POULTRY ASSOCIATION. January 13, 14, and 15. Hon. Sec. Frank Bottom. Secretary to the Canary Department, Jno. Hetherington, jun., Sneinton.

PRESTON AND NORTH LANCASHIRE. January 21st and 22nd, 1857. Sec., Ralph Leigh, Esq., 125, Church Street, Preston. Entries close December 13th.

N.B.—Secretaries will oblige us by sending early copies of their lists.

TO SECURE COLOUR AND VIGOUR.

THERE has, from time to time, been much disappointment manifested by amateur poultry fanciers, as to their individual success in raising first-class chickens; and complaints have, at rapid intervals, been made to the writer of this article that it was "impossible," even after the most careful selection of the parent stock, to insure the production of a single chicken equal to their progenitors. With but comparatively little difficulty I have hitherto privately solved this enigma, and traced the progressive failure either to ill-advised selection at the onset or the even more fatal error of long inter-breeding. A few very brief remarks, therefore, may not, perchance, be deemed uninteresting, on the chief causes that produce failure as to perfection in the offspring.

Of course an exceedingly prominent feature in all varieties of poultry, more especially those intended for public competition, is colour. It is equally important with any other trait of character; and deficiency in this respect has oftentimes compelled the immediate rejection of a fowl by its owner, that, barring this imperfection, was not unfrequently one of the best, otherwise considered, in the whole yard. Many years' careful observation of the results of breeding, and comparisons from a regularly-kept diary from year to year, have convinced me, beyond all doubt, that the male bird has an infinitely greater influence on the colour of the offspring than has the female. I have tested this so frequently that I firmly believe, if there is *any* rule without an exception, this just alluded to is the one. In *Cochins* the proof was a somewhat intricate one; but the result of many seasons proves that a really deep orange-coloured cock, coupled with a PERFECTLY clear-grounded hen, even if that hen is so far diverse as to be what is technically termed a "silver cinnamon," will not unfrequently produce chickens identically similar for colour as the sire. If the hens mated to such a cock should themselves be clear buff, the rule is then all but universal, that the chickens partake of the like-coloured plumage, but, on the contrary, where the male bird is faulty in the colour of his featherings, even though the hens betray not the slightest infringement as to their individual purity, the "sporting" into almost every variety of colour, and markings to boot, manifest themselves with scarcely an exception. As a summary I have, in repeated

instances, known Cochins take first prizes year after year as "Buff" birds, when they were actually bred from a clear lemon-coloured cock and deep grouse-feathered hen, betraying, even on the closest examination, not the slightest visible sign of their *maternal* impurity; but, on the other hand, after long-attempted trials, I could not instance a single case where the majority, or even more than an isolated bird, betokened "pure buff" where the colours of the parents were reversed. In *Hamburghs* the like proved invariable—the ground colour and markings almost always approximated very closely to that of the cock bird. In *Sebright Bantams* the never-varying results were identical with those before-named. As a still farther and most cogent test, the attempt was made with a purely-descended Black-breasted Game cock of the old Earl of Derby's breed, crossed with a well-bred entirely White Game hen. The same season the sister pullet of the just-described Game cock was mated with a clear White Game cock. Both of these "crosses" prospered exceedingly, but the result proved so diverse as to be almost incredible. The chickens from the Black-breasted Game cock and White hen were as follows:—Twelve "brown-reds," of excellent feathering; four black-breasted red cocks, and one pullet to match them; and nine very good-looking, exceedingly dark-coloured "red piles;" thus making twenty-six chickens in the aggregate without a single white one! By accident of one kind or other only fourteen chickens of the other cross attained maturity out of two distinct hatches. Of these eleven were nearly white ones, only possessing a scattered feather here and there; indeed, so few were they in number that three pens of these birds were actually publicly exhibited, after a little previous "trimming," as "White Game chickens," and carried premiums as such. Of the remaining three two were light "red piles," and the other one a purely black bird, when two years old, with golden hackles! Enough has been proved as to the probable results as to colour in the off-spring, and how far chickens are usually influenced in that respect by the male; but the results have always been as absolutely conclusive that the *conformation and prominent characteristics* were, as to the FEMALE parent, as closely assimilating. This distinctly proves that the most probable means of attaining any much-desired colour in poultry is to pay special attention to the perfection of the male in this particular, and that conformity of general character will tally pretty closely on the maternal side.

As to constitution and the promotion of rude health, combined with no deterioration in point of size, these much-to-be-desired advantages can never even be hoped for, far less expected, where close inter-breeding has long been foolishly persisted in. How frequently it is that "poultry friends" write me the most lachrymose and evidently heart-felt complaints, inquiring, "How can it be? They had the very best fowls of any one for some years, as the list of their exhibition successes would fully prove; they have always studiously avoided disposing of their best and selected chickens; no strangers have been allowed to intrude upon their fowls' walks; and yet their present collection is hardly worth the trouble of killing." Scores of letters now before me are but, as it were, the echo of the previous query. The fault is exclusively LONG-CONTINUED AND INCESTUOUS INTER-COURSE. This result is always inevitable. By careful close breeding the amateur owner may arrive at the acme of perfection; but with the same strain he cannot CONTINUE breeding to his greatly-envied standard. His hopes will be frustrated, and the popularity of his stock topple down headlong, if he determinately attempts it. Arrived at this long-coveted point, Nature recoils, comparative sterility ensues, and an enfeebled progeny, even if they, by careful management, do live, tells forcibly there are bounds assigned beyond which we cannot progress. Even then an alternative, indeed, a radical remedy is at every one's disposal. An infusion of "fresh" blood instills renewed vigour; whilst, by this course, malformation, imbecility, and constitutional weakness, speedily give way.—CHANTICLEER.

SOME OF MY POULTRY EXPERIENCE.

Who has not read "Dred," and smiled at our old friend, the black and woolly-headed Caleb Balderstone, who hides

everything behind his laugh, and cannot help it, "it is so curus?" Neither can I; it is so odd.

I had a pen of *Hamburgh* fowls—sent them to a Show—three good Judges—got third prize. Sent them again—got nothing. Third time, got first. Much delighted, sent them again—got nothing; was told they were worn out—advised to put them in at a selling price; did so—10s. each; got the first prize, and my birds, worth £10, were sold at 30s. Very cross, but can't help laughing—"it is so curus." Judge for myself in future.

I suppose it is "human natur" for a man to assist others in deceiving him. I knew my *Hamburghs* were good, better than most people possessed; but I had an evil genius in the shape of an intimate friend, and with the sort of fascination that makes us look, spite of ourselves, at an unpleasant sight. I chose him for my adviser. I knew he would give me well-meant but wrong advice, because his praise was always qualified by a "but" or an "if." As I am smarting under the loss of my pets, as I believe they will be among the winners at Birmingham, and as other people are now preparing for that great struggle, I put up myself as a warning, and as I stand, I laugh such a laugh, because, after all, "it is so curus."

And you laugh, you strong-minded man, and you say to yourself, "I should like to see any one inducing me to sell my birds." There were once several men at table—among them two editors of newspapers, and the most popular actor of the place. The conversation turned on the power of the press. "Gentlemen," said the comedian, "beginners may dread the press; but reputations that are made may laugh at it." "Indeed!" said the editors; "do you mean to say you are above its power?" "Yes, my friends," was the answer; "I hurl a friendly defiance at you, and forgive you beforehand." I should say this occurred in a large town in France.

The next morning the *Courier*, in its article on the theatre, said, "We last night saw our old friend in his favourite character. He was, as usual, inimitable; but genius cannot conquer time, and all his life and joyous action cannot hinder us from seeing that he is fast becoming middle-aged—he is getting stout." The actor shuddered when he read it; he started up to consult the glass; decidedly, he thought, he was inclining to *embonpoint*. He would consult medical men; he would reduce himself; but, in the mean time, he must go through his parts. His faultless form had never required assistance; but now he sought help, and a cleverly-contrived belt was constructed. He tried it, was delighted, and laughed cheerfully—"it was so curus."

The *Journal*, two days after, wrote, "What strange folly has taken possession of our friend? What can he mean by appearing on the stage trussed and screwed like a dressed figure in a tailor's shop? Does he forget he is an artist and a man of genius? Will he depend, in future, on a spider waist, an irreproachable costume, and elaborate boots for his popularity? Believe us, my good friend, talent like yours can dispense with such helps."

"Decidedly," said he, "the *Journal* is right," and the belt was abandoned.

Then came the *Courier*. "At the last representation but one we thought we were deceived; but now we are sure we are right—he is getting fat."

"A plague on both your houses!" said the poor man, and resumed his belt.

Thursday's *Journal* said, "We warn him again, and for the last time, that if he forgets his real talent, and fixes his mind on personal appearances, shared by nineteen out of twenty who go to see him, he will find his popularity wane. We want to see a man who personifies the creations of our great dramatists, and we are indifferent to the exact number of inches he measures round the waist."

He heard, or fancied he heard, people canvassing the point during the performance. Instead of identifying himself with the character, he was thinking of himself, and, sending for the editors, he gave in.

"Are you a fancier of *Hamburghs*? Ask my friend to see them."

"There, Sir, did you ever see better?"

"They are excellent."

"I defy any one to find fault with them."

"It is difficult, but the deaf ear of the cock is not

perfect in shape. It is white, I grant; but it hangs down like a Spanish fowl's lobe. The third pullet, you will see, has a very spotted hackle, almost always the case when the tail is well pencilled. That hen has a beautiful neck, but her tail would disqualify her at any Show. The third has a good neck and tail; her body is beautifully pencilled; she is a lovely hen, and if her comb were straight there would be nothing to desire."

"You said, just now, they were excellent."

"So they are, but —"

"Nay," said I, "no more *buts*. Come again to-morrow."

Now, I knew my fowls were good, more than good; and after dismissing my friend, I returned to the ground where they were. I looked at them a long time, and although I would not admit it, I saw, for the first time, there were defects in the ear-lobe of the cock, and in the tails and combs of the hens. They had always existed, even while they were taking prizes; but I had not before noticed them.

Doubt had entered my mind, and I left the birds in a dissatisfied humour.

My friend came the next day; again he pointed out the defects, and enlarged upon them, until, at last, I expressed my sorrow that I had entered them for a neighbouring Show. "They may pass," said he, with an expression of pity in his face; "but" (and he gave a knowing look), "they would not if I were Judge." I was vexed, and, instead of sending them, I sold them.

I visited the Show as soon as it was open, and, meeting one of the Judges whom I knew, asked him to name the best pen of Hamburgs, as I was determined to have the best. "Buy the Cup pen, beyond a doubt," said he; "they are birds of surpassing merit."

I looked, I laughed—"it was so curious." There were my discarded birds, the distinguished above all in the Show!

I knew they were good birds; my opinion had been endorsed by the best Judges in the country; and yet I wilfully, and with open eyes, allowed a friend, not half so good a judge as myself, to swear me out of my birds and the Silver Cup; or, at least, to "damn them with faint praise."

We may deny it as strenuously as we will, and may brag of our independence, but it is useless; we *do* care for the opinion of other people; and on the co-operation or opposition of those around us depends our happiness.

I would, however, having said and admitted this, warn exhibitors against being led entirely by *soi-disant* judges. There never was, and never will be, a perfect pen. How often do we see a first-prize pen at a ridiculously low price, because some friend advised the owner to put it in and sell it!

When one of the defeated sees the amazed look of the winner at the label "Silver Cup," and "sold," he laughs—"it is so curious."

WARNING.

IN one of the numbers of THE COTTAGE GARDENER for September there is an advertisement for some pure white-faced Spanish fowls from a man named *Clifford*, of Manchester. Having some to part with, I answered the advertisement, offering and requesting a reference. The references given me were to Jas. M. Gardiner, Esq., 10, Bank View, Collyhurst, near Manchester, and E. Bramley, Esq., Vauxhall Road, Manchester. I ultimately sent twenty-two very beautiful birds; and from there being some delay in the delivery, the police saw the hamper, and informed the railway authorities that no such person is to be found at that address, and it turns out that all three parties are in league together. The end of it is, that twelve of my poor birds are *starved to death*, and ten I received back again, with 18s. 6d. expenses to pay upon them. I am sure you would do your readers a great service by cautioning them against such parties, and suggest to them not only the desirability of a reference, but to ascertain who the *referees* are.

The letters are well written, and have every appearance of respectability.—G. A. BEARDMORE, *Springfield House, Basford, Notts.*

[In selling fowls we advise prepayment to be required, with an understanding to return the money, after deducting expenses, if the birds are returned.—ED. C. G.]

GOLD AND SILVER-PENCILLED FOWLS.

IN THE COTTAGE GARDENER for October the 7th I perceive, in answer to a correspondent, "H. N.," relative to the colouring of a Golden-pencilled cock's tail, some remarks worthy of notice. You say, "The ground colour of the tail of a Golden-pencilled Hamburg cock should be *black*, all the feathers should be edged with a rich deep brown, but none should be entirely of that colour;" while your correspondent, "W. H., *Exeter*," on the preceding page, says, "The tail as bronzy as possible, with the sickle feathers well marked if you can." Between these widely different answers, the one advocating a *black* tail, the feathers only edged with bronze, and the other desiring it as bronzy as possible, I fear "H. N." will not find it very easy to decide. I therefore beg to be allowed to make a few remarks on the colour of the tails of Golden and Silver-pencilled cocks, for though I strongly object to their being called Hamburgs, yet I am a fancier and breeder of the variety, and it is my opinion that the tails of both Golden and Silver-pencilled cocks should be a deep unspotted black; that the tail-coverts, or, as they are commonly called, the sickle feathers, should be of a deep glossy black, with green and purple reflections, and finely edged or laced with, in the Golden, coppery brown or bronze, and, in the Silver, greyish white. I am aware that this opinion is adverse to that of some of our judges and exhibitors, and that they consider a wholly bronzed or silvered tail of much importance; but such theory is not borne out by the experience of the practical breeder. Numbers of instances might be quoted to show the fallacy of the bronzy tails. "W. H., *Exeter*," says, "Indeed, as a class, they are more uncertain of throwing good offspring than any other kinds of the Hamburg breed." How often, too, is it noticeable in the show-pen that the cocks with the most silvered or bronzed tails are matched with the worst-marked hens; while few who went to the late Anerley Show, if they had any idea of the points of a Pencilled hen, could have passed unnoticed two pens of magnificently-marked Silver hens, better than which I never remember seeing, with a card above them which informed the public that the hens only were sold to Mr. Archer, a pretty plain indication that that gentleman appreciated their value; but he neglected the cocks; nor were the pens noticed by the Judges. And why? because they had black tails. The sickle feathers were only edged, as I contend they ought to be; and, moreover, they had the bars on the wings, so difficult a point to be obtained in this breed.

As I find, in your answer to "H. N.," you say, "Barred wings are wrong for Pencilled Hamburgs," allow me to explain what I mean by the bars on the wings of the Pencilled cocks. I do not mean a double row of moons or spots, like those of the Pheasant fowl, or so-called Spangled Hamburg, but simply an irregular narrow black line across the wing, formed by small spots on the end of the first row of wing-covert feathers. These covert feathers should be barred with black on the inner web, which is hidden from view, the outer being clear, either red in the Golden or whitish in the Silver, and quite free from white in the Golden or brown in the Silver, with a narrow black spot at the point, which forms the bars.

My reason for advocating the black tail and bars on the wings is, the necessity of a certain depth of under-colour in the cock; for as the male parent influences the plumage of the female offspring, so, if the cock has not a sufficiently dark under-colour, he cannot, as a rule, produce dark, well-marked pullets; and it is therefore necessary that the cock should have a black tail, black pinion feathers, that the inner webs of the secondary wing feathers should be black, and the inner web of the greater covert feathers should be barred with black. These I consider as the outward signs of a Pencilled cock's being likely to produce good, well-marked hens. I do not pretend that it is an infallible rule—exceptions may occur; nevertheless, my experience shows that a cock with good depth of under-colour will, as a general rule, produce much handsomer pullets, and in much greater abundance, than a light one with silver tail or white pinion feathers—a point which is too often disregarded by our judges and breeders of this truly beautiful and useful variety.

As regards the hen-feathered cocks, which you designate "an abomination," it is my humble opinion that such, if accurately pencilled, would be far more valuable, on account of uniformity and their matching the hens. True, such are not, at present, fashionable; but then fashion is a fickle and deceitful guide.

Trusting that these remarks may be useful to your correspondent, "H. N.," and that "W. H., *Exeter*," if he tries the experiment, will not find them so uncertain to breed good offspring from, my reasons for troubling you will be attained.—B. P. BRENT.

LANCASHIRE SHOWS OF HAMBURGHES.

I HAVE always understood, and am persuaded, that in Lancashire we are more or less celebrated for the perfection to which the different varieties of Hamburgs are brought by careful breeding and unceasing attention on the part of our mechanics, cottagers, colliers, weavers, and other labourers, &c.; and no persons except those who take an interest in these matters, and are on the spot, and in frequent personal communication, can form an adequate idea of the immense interest each and all have in the subject; and I venture to say that no class of men in the same or similar positions in any other part of the United Kingdom bring to bear the same amount of intelligence or perseverance that many of these men do, and have done for many years; indeed, long before the present and increasing interest publicly felt in poultry matters.

Another section of the same class are equally interested in Gooseberry and Apple growing, which they have brought to great perfection, and which of itself, and faithfully represented, might prove of interest to many of your readers, and may form the subject of a future communication, if you think it worth a column in your paper.

I am led to these brief remarks in order to call your attention to the want of information in your paper connected with many of our local Poultry Shows, which at this season of the year are numerous amongst us, and are little known to other amateurs in various parts of the country, on account of their *local* character, and because few persons will give themselves the trouble to furnish the information for publication, and, in fact, for sundry reasons, not necessary to mention, would prefer to keep quiet.

I have not been accustomed, hitherto, to take part in our public Exhibitions, but feel great interest in the results of each, and your reports, from time to time, are most acceptable.

To those who are acquainted *practically* with the detail of breeding, and the few *show* birds obtained from the very best and purest strains, a really conscientious man must feel at times a difficulty in conforming to the rules of many of our Poultry Shows; and not only so, but many of the *points* our best Judges insist upon give direct encouragement to an impurity of race, by partial cross-breeding, to secure the point aimed at; and it is certainly understood amongst us that you cannot breed good cockerels and good pullets from the same birds, and it is not every successful exhibitor who would care to say who *really* bred the birds, or a portion, forming a successful pen.

I have little hesitation in saying that many prize birds are bred by those who have not the means to show them on their own account, or are lent for particular occasions; and were it requisite, or would answer any good purpose, I could satisfactorily prove it.

I inclose you particulars of the last Show amongst us, and shall make no apology for its humble character, because I believe them to be the nucleus of something better, and the birds shown were of a choice character, and were shown singly, one pullet in each pen.

I hope, however, to forward you shortly the result of two or three others, and one in particular, as being the Show, and at which our Yorkshire neighbours and south countrymen think it worth while to send representatives to pick up likely birds for the forthcoming Birmingham and other Shows.—G. D. RUSHTON.

Particulars of a local Poultry Show at Mr. James Chadderton's, Chapel House, Hollinwood, Saturday, October 25th, 1856.

Shown in single pens, one pullet in each pen.

JUDGES.—Jno. Andrew, Waterhouses, near Ashton-under-Lyne; Jos. Saxon, Kavarlow, near Ashton-under-Lyne; and John Scholes, Bucklow Green, Chadderton, near Oldham.

Prizes awarded were, in each class—1st. Rocking Chair. 2nd. Copper Kettle. 3rd. Metal Teapot.

GOLDEN-SPANGLED HAMBURGHES.—First, James Taylor, Rigley Head, Hailsworth. Second, James Ogden, Dorton Lane. Third, Jno. Wolfenden, Lime Gate, near Oldham.

SILVER-SPANGLED HAMBURGHES.—First, John Brown, White House, Hailsworth. Second, Jonathan Booth, Hailsworth. Third, Henry Bucklow, Higginshaw, near Shaw.

GOLDEN PENCILLED HAMBURGHES.—First, James Taylor, Rigley Head, Hailsworth. Second, Jno. Wolfenden, Lime Gate, near Oldham.

SILVER-PENCILLED HAMBURGHES.—First, Jno. Taylor, Rigley Head, Hailsworth. Second, James Chadderton, Hollinwood. Third, Jno. Brown, White House, Hailsworth.

BLACK HAMBURGHES (local name, Black Masks, or Black Rosy Combs).—First, Henry Smith, Hailsworth. Second, Jno. Taylor, Hailsworth. Third, Robt. Andrew, Hollinwood.

BIRMINGHAM POULTRY SHOW.—The entries are about twelve hundred.

PHILOPERISTERON SOCIETY.

THE first Meeting of the above-named Society for this season took place on Tuesday, October 14th, when there was, perhaps, the best show of young Pigeons ever exhibited. They were all choice specimens of the various kinds, and were very much admired, particularly the Carriers of Mr. Parkinson and Mr. Hayne, and the Fantails of Mr. Harrison Weir.

The enthusiasm with which the various breeds of pigeons are reared is certainly remarkable; but when their beauty, their docility, and their remarkable differences are taken into consideration, is it not surprising one circumstance alone gives the Pigeon amateur an advantage over the poultry breeder that cannot fail to be appreciated? that is, the power of keeping a number of different varieties without fear (if they are properly mated in the first instance) of any crosses; so that all colours and forms—the inflated Pouter, the Wattled Carrier, the short-necked Barb, the long-headed Scandaroon, the heavy Runt, the subtle Antwerp, &c.—can be reared in a single apartment.

In addition to the interest they excite as mere objects of fancy, Pigeons are especially interesting to the naturalist, from the facility with which they inter-breed, and the quick succession of generations, early-hatched birds of the year often breeding the same season. Hence they have, of late years especially, received much attention from those naturalists who are investigating the facts which bear on the distinction between permanent species and new varieties.

The late Mr. Yarrell was a constant visitor at the Exhibitions of the Philoperisteron Society, and one of his most intimate friends, a gentleman who occupies the highest position as a naturalist, was elected a member at the last meeting.

The natural history inquiries are much facilitated by tracing the continuance to the present time of breeds formerly known and figured. There are, at present, one or two varieties which it is desirable thus to trace; and I should feel under considerable obligation to any of my readers if they can inform me of the present existence of the old Finnikin or Turner Pigeon.—W. B. TEGETMEIER, *Tottenham*.

DEFALCATION IN THE PAYMENT OF THE ANERLEY POULTRY SHOW PRIZES.

IN THE COTTAGE GARDENER of last week, in answer to a correspondent, you say that you have been informed by the Secretary of the Anerley Poultry Show, that all the prizes gained at its last Exhibition have been paid, with the exception of one.

Besides the instance of the correspondent to whom your reply is addressed, and the many others you refer to, I beg to inform you that a 10s. prize for a pair of Silver Owl Pigeons, and a Commendation which entitles me to the Society's Medal, are still due to me, although I have written three times respecting them.

It is not the value of an individual prize so much to be considered, as the honour of the Society, which is thus injured by shirking its engagements.

I have deferred writing to you on the subject before, being myself Secretary of the Nottingham Poultry Association; but I beg to inform you that it is the intention of the Nottingham Association to *pay all prizes* within one week after the close of the Show.—FRANK R. BOTTOM.

WRINGTON AND BURRINGTON AGRICULTURAL ASSOCIATION'S POULTRY SHOW.

THIS was held at Redhill, in Somersetshire, on the 29th of October. Mr. Andrews was Judge, and he awarded the prizes as follows:—

For the best GAME, premium by John R. Rodbard, Esq., to J. R. Rodbard, Esq., of Aldwick Court. Ditto, two subscribers, to J. R. Rodbard, Esq.

For the best SPANISH, premium by Rev. T. J. Bumpsted, to Mr. C. Edwards, of Brockley Hall.

For the best COCHIN-CHINA (Cinnamon and Buff), premium by Robert Baker, Esq., to Rev. G. F. Hodson. Ditto, two subscribers, to Rev. G. F. Hodson.

For the best COCHIN-CHINA (Partridge and Dark), premium by the Rev. G. F. Hodson, to Mr. J. R. Rodbard. Ditto, two subscribers, to Rev. G. F. Hodson.

For the best COCHIN-CHINA (White), premium by J. R. Rodbard, Esq., to J. R. Rodbard, Esq. Ditto, three subscribers, not awarded.

For the best DORKING, premium by John James, Esq., to J. R. Rodbard, Esq. Ditto, four subscribers, to Miss Wilcox, Nailsea Court.

For the best HAMBURGH (Gold or Silver-pencilled or Spangled), premium by Chas. Edwards, Esq., to Mr. J. K. Bartrum, Bath.

For the best CROSS-BRED, premium by H. J. Addington, Esq., to Mr. John Ham, Langford.

For the best TURKEYS, premium by Rev. J. Vane, to Mr. J. R. Rodbard. Ditto, two subscribers, to Mr. C. Edwards.

For the best GEESE, premium by the Rev. F. L. Hesse, to Mr. F. Edwards, of Bulstrode Park.

For the best AYLESBURY DUCKS, premium by Charles Edwards, Esq., to J. R. Rodbard, Esq.

For the best DUCKS, NOT AYLESBURY, premium by the Rev. Robert Baker, to Mr. C. Edwards. Ditto, two subscribers, to Mr. C. Edwards.

The Judges, in all the classes, commended (sometimes highly) various specimens which did not obtain premiums.

DIARY FOR THE DAIRY, PIGGERY, AND POULTRY-YARD, FOR 1857.—We have been favoured with the perusal of the proof-sheets of this work, for full particulars concerning which we refer our readers to our advertising columns. It is prepared by Mr. Warwick, so favourably known in connection with the Essex Poultry Association, and we can recommend the work to all who wish to keep a careful record of their proceedings as keepers of cows, pigs, or poultry. The Directory giving the names and directions of poultry-breeders, and a list of the varieties they rear, is a very useful addition.

THE HOUSEHOLD.

MAKING GERMAN YEAST.—Take brewery, or, by preference, distillery yeast, and filter this through a muslin or silk sieve into a tub or vat containing about four or five times the quantity of soft or cold spring water. The water must be as cold as possible, and in summer ice should be dissolved in it. As soon as the liquid yeast comes into the water the whole must be well stirred up (in preference with a broom) until it is thoroughly mixed, and has a good foam or light head; then leave it until quite settled and the water becomes clear; then draw the surface water gently off, so as not to disturb the settled substance.

The tub should have cocks at different heights, to allow the water to be drawn off gently by opening the highest cocks first. This done, you again pump the tub full of cold water, and stir it up again; let it settle, and draw off as before, and repeat this operation until the water becomes tasteless and clear; that is, till the water has cleansed the yeast of all its bitterness.

Then add to the settled substance, for every twelve gallons of yeast employed at the commencement, half an ounce of carbonate of ammonia, and one ounce of bicarbonate of soda, which should be previously dissolved in a pint of cold water;

mix this liquid with the purified yeast, and leave it in this state for the night, or twelve or fourteen hours.

Then pump cold water again into your tub, stir it well up as before, and when settled draw it off, which concludes the purifying process.

This done, the yeast in its settled state must be emptied into a clean linen bag, tied up, and placed between two boards large enough to cover the bag, which is intended to press the liquid substance out, which must be done as gently as possible, so that the substance becomes gradually freed from water, and forms itself into a substance similar to bread-paste or dough, which can then be formed to size and weight as needed. In Austria the weight is something near one pound when dry, in square forms, and about one inch thick.

The whole process should be conducted in a very cool place, and when once the pressed yeast has become moistly dry it should be kept in a cold place, as otherwise the yeast-ing process will begin; whereas, kept in a cold place, it will keep from eight to ten days in summer, and from ten to fifteen in winter, but not longer in Austria.—(*The Times*.)

PLAIN BISCUITS.—Put a quarter of a pound of flour before the fire, and, when quite dry, have ready half a teacup of boiling water, and mix it up with the flour as quickly as possible. Roll it out very thin, and with a cutter make them the size you wish, and bake them in a quick oven.

Having seen that a receipt for plain biscuits is wished for, the above is sent as not only being most simple, but because, when well made, they have been preferred to any that have been bought. To the instructions above, the writer thinks it as well to add that they should be rolled out as *thin as paper*, and put on a baking tin, and done very quickly, but not allowed to burn.—L. R.

BISCUITS.—One pound and a half of butter, one pound and a quarter of powdered lump sugar, three pounds of flour, three eggs well beaten, one ounce of caraway seeds, or one pound of currants, well worked together, rolled out, and cut.

WINE BISCUITS.—(Cheap and good).—One pound and a quarter of flour, three-quarters of a pound of powdered lump sugar, one quarter of a pound of butter, a large teaspoonful of sal volatile (in the liquid state), twenty-five drops of the essence of almonds (if approved). Rub the butter in the flour; add sugar; work them well with the sal volatile; add the eggs; work well again; roll out thin into *small cakes*; wash with white of egg. Bake in a slow oven, observing to place them *far apart* on the tins, and to keep them, after baking, in a biscuit tin. They will keep good for weeks.—A ONE-YEAR SUBSCRIBER.

OUR LETTER BOX.

DUN-COLOURED GEESE.—We have two letters informing us that the direction to the owner of those shown at Sowerby Bridge, is "John Ransom, Esq., Brockwell, Sowerby, near Halifax, Yorkshire."

BLACK BANTAMS (*Old Subscriber*).—It is not essential that Black Bantams should have white ear-lobes, nor is it a great point in their favour, but it gives them a *taking look*. It is essential the cock should have sickle feathers, and they cannot be too long. They are fit for exhibition at eight or nine months old, sometimes at six months.

LONDON MARKETS.—NOVEMBER 10TH.

COVENT GARDEN.

We have little to add to our report of last week, the supply of vegetables and rough goods being quite equal to the demand. The arrivals from abroad of nearly the same description, with the addition of new *Oranges* and *Lemons* from ports in the Mediterranean.


POULTRY.

The market is always influenced by cold weather, and the alteration in temperature during two or three days was not without its effect. It was, however, only temporary.

Large Fowls 4s. 6d. to 5s. 0d. each.	Hares 3s. 0d. to 3s. 6d. each.
Smaller do 3s. 6d. to 4s. 0d. "	Ducks 2s. 9d. to 3s. 0d. "
Chickens .. 2s. 0d. to 2s. 6d. "	Geese 7s. 0d. to 7s. 6d. "
Grouse 1s. 9d. to 2s. 0d. "	Rabbits 1s. 5d. to 1s. 6d. "
Partridges .. 1s. 6d. to 1s. 9d. "	Wild ditto 10d. to 1s. "
Pheasants .. 3s. 0d. to 3s. 6d. "	Turkeys 7s. to 8s. "
Pigeons..... 8d. to 9d.	

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WEEKLY CALENDAR.

D M	D W	NOVEMBER 18—24, 1856.	WEATHER NEAR LONDON IN 1855.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
18	Tu	The November Moth.	30.171—30.160	47—39	N.E.	06	26 a. 7	5 a. 4	10 10	21	14 35	323
19	W	The winter Moth.	30.069—30.010	47—38	E.	05	28	4	11 25		14 21	324
20	Th	Sun's declination, 19° 49' s.	30.003—29.871	44—37	N.E.	01	29	2	morn.	23	14 6	325
21	F	PRINCESS ROYAL BORN, 1840.	29.889—29.835	43—36	N.E.	02	31	1	0 37	24	13 51	326
22	S	Teal arrives.	29.829—29.784	42—27	N.E.	00	33	0	1 47	25	13 35	327
23	SUN	27 SUNDAY AFTER TRINITY.	29.764—29.750	43—34	S.W.	00	34	III	2 56	26	13 18	328
24	M	Fieldfare arrives.	29.924—29.809	43—37	N.	02	36	58	4 7	27	13 0	329

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 48.0°, and 35.1°, respectively. The greatest heat, 59°, occurred on the 20th, in 1844; and the lowest cold, 16°, on the 18th, in 1851. During the period 95 days were fine, and on 101 rain fell.

A MEETING of the BRITISH POMOLOGICAL SOCIETY was held at the Rooms, 20, Bedford-street, Covent Garden, on Thursday, the 6th inst. Robert Hogg, Esq., Vice-President, in the chair.

The Meeting was numerously attended, and the collections of fruit sent for exhibition and examination showed that the interest which has hitherto attached to the Meetings of this Society continues unabated, and that the Society itself is now exercising a marked influence on the fruit culture of this country.

The proceedings of the day were commenced by an admirable paper read by Mr. Spencer, of Bowood, "On the Growth of Orchard Fruits on certain soils and exposures." The orchard from which the observations were taken is situated in the immediate vicinity of Bowood, where the soil is not only of a poor, sandy nature, but is further rendered peculiarly ill-adapted to the growth of fruit-trees by containing a large percentage of peroxide of iron, in addition to which its situation is on a hill sloping to the north and north-west, and bounded at its base by a running stream. After furnishing a sketch of the geological strata, and a description of the soil and the operations which were found necessary to render it suitable for the reception of the fruit-trees, Mr. Spencer then furnishes three copious lists of fruits; the first being those which appear to be perfectly healthy, and adapted for such a situation; the second, such as are either not so healthy as those in the first, or are cankering, and showing other signs of decay; and the third, those which are perfectly worthless, and will require to be removed this autumn. At the unanimous request of the Meeting, Mr. Spencer consented that this paper should be printed in the next number of the "Transactions."

A paper was also read from R. Varden, Esq., of Seaford Grange, Pershore, "On the effects of frost on the blossoms of Fruit-trees." This was a continuation of the observations which have been already published in the "Transactions," and it was unanimously agreed that this continuation be also printed.

The seedling Grape which was sent by Mr. Melville, of Dalmeny Park, N. B., to the last Meeting, but which was not in a sufficiently ripe state to enable the members present to form an opinion of its merits, was again produced. On this occasion it was perfectly ripe, and, although it was found to possess good flavour, it was considered not to possess any qualifications superior to other Grapes already in cultivation; the opinion of the

Meeting was, that it is more vinous than the *Black Prince*, but not so sweet as *Black Damascus*.

A new seedling Grape was also produced by Mr. Spencer, called *Bowood Muscat*. This was exhibited at the November Meeting of last year, but was in an unripe state. The specimens now produced, though not thoroughly ripe, were sufficiently so to enable the Meeting to pronounce an opinion. The bunches are large and thickly set. The berries are large and oval, larger than those of the *Muscat of Alexandria* grown in the same house, and more oblong oval than those of the *Cannon Hall Muscat*. The flavour is equal to that of Cannon Hall and Muscat of Alexandria; but its great characteristics are—it ripens rather earlier than the Muscat of Alexandria, though the Vine is ten days later in breaking in the spring; the bunches are broader and shorter; *every bloom sets even in a low temperature*, and hence the bunches are always compact, and must be well thinned; and it keeps as well as the common Muscat. The habit is scarcely so vigorous as the Muscat, and will require good cultivation. It is a seedling from the Cannon Hall and Muscat of Alexandria.

Specimens of the *Champion Hambro'* were exhibited by Messrs. J. and C. Lee, of Hammersmith. The berries were large, and remarkably well-flavoured; the skin very thin and delicate; the flesh tender, very juicy, and vinous. They contrasted very much with the finely-grown *Dutch Hambro's* from Mr. Tillyard, of Heckfield, which is a thick-skinned variety, and, notwithstanding the superior cultivation to which they were subjected, showed all the appearance of being a coarse variety, and infinitely inferior to the Champion.

Mr. Spencer, of Bowood, exhibited remarkably fine specimens of *Black Hambro'*, the bunches of which were large; the berries very large, as much so as the Dutch Hambro' of Mr. Tillyard, and very deeply coloured. The flavour was rich, very sweet, and vinous.

A bunch of Grapes from Mr. Hill, of Keele Hall, Staffordshire, said to be *Raisin de Calabre*, was found not to be true to name; but none of the members present were acquainted with the variety. It did not possess any remarkable features to recommend it as desirable.

Mr. Hogan, of Lockwood Gardens, near Huddersfield, sent a bunch of Grapes without a name, which proved to be the curious-looking *Cornichon Blanc*, the berries of which may be described as like very large Barberries.

They are long and narrow, like the beak of a bird, and hence the synonyme of "Bec d'Oiseau."

A *Seedling Pear* was received from Mr. Girdwood, of Falkirk, N. B., which was buttery and juicy, with a sweet and sugary flavour, and a slight aroma. The Society, though regarding it as a good-flavoured Pear, did not consider it a variety which they could recommend for cultivation. We are of opinion, however, that a Pear with the properties which this specimen possessed, if produced on a standard in the climate of Scotland, is deserving of notice.

A *New Yellow Late Peach* was exhibited by Mr. Rivers, of Sawbridgeworth. It was received originally from America, and promised to be a useful addition to the varieties already in cultivation in this country. Its colour externally is a pale yellow, and the flesh of a deep yellow colour. The flesh separates from the stone, to which some of the flesh fibres adhere, and is melting, juicy, and well-flavoured; and when we consider that the specimen was submitted to the Meeting on the 6th of November, it must be regarded as a desideratum, being superior to the other Peaches on which we depend late in the season.

Mr. Dancer, of Fulham, exhibited specimens of a new Apple, called *Barchard's Seedling*, of which the Meeting approved. It was raised by Mr. Higgs, gardener to the late J. H. Barchard, Esq., of Putney Heath. The fruit is below medium size, and somewhat ovate, prominently ribbed at the apex. The skin is of a clear lemon yellow colour, and striped on the side next the sun with bright crimson. The flesh is yellowish, crisp, brisk, and sugary, with a flavour resembling that of the *Manks Codlin*. Mr. Dancer considers it a variety valuable for market purposes, as the tree is a vigorous grower and an abundant bearer. It ripens in October, and is a fine, showy-looking fruit.

Four varieties of *Seedling Apples* were sent by Mr. Challis, gardener to C. R. M. Talbot, Esq., M.P. for Glamorganshire. Two of them were said to have been raised from *King of the Pippins*, but all of them appeared to have a considerable mixture of the Siberian Crab in their constitution, the flesh being crisp, semi-transparent, and acid. Neither of the varieties were considered worthy of cultivation, except No. 1, which, from its showy appearance, was thought might be useful for decoration. The same gentleman also sent an interesting collection of *Oranges*, of various sorts, which had been ripened in the open air, among which was the *Blood Orange*. These were found to be thoroughly ripened, and some of them to possess very good flavour.

H. Bellenden Ker, Esq., of Cheshunt, a Vice-President of the Society, sent two excellent specimens of the *Portugal Quince*, and a sample of *Quince Marmalade*, from Marseilles. This variety is considered superior to all others for domestic use, as being much milder in flavour, and well adapted for making marmalade and for baking, as it becomes of a fine crimson colour when cooked.

Mr. Tillyard, of Heckfield Place, Hants, sent three well-grown Pines. A dish of very fine *Morello*

Cherries, which had been most successfully kept, and were even then in excellent condition. A branch of *Rivers' Double-Bearing Raspberry*, the fruit of which was large, and of excellent flavour. A plant laden with fruit of the *American Cranberry*, and a box containing a quantity of the fruit, which, for size and flavour, were all that could be desired. A dish of *Red Dutch Currants*, in fine condition; the bunches long, and the fruit in excellent preservation. Specimens of *Coe's Late Red Plum* were perfectly ripe, and the finest specimens of this valuable variety which have ever been submitted to the Society. They were large, melting, and with as much flavour as could be desired in a dessert Plum at this late season of the year.

From Mr. Rivers, of Sawbridgeworth, were received branches in full fruit of the *Large-Fruited Monthly Raspberry*, the *Hybrid Black*, and the *Merveille de Quatre Saisons*, red and white. Of the Large-Fruited Monthly Mr. Rivers stated in a communication, that it required to be removed annually, and planted on a piece of fresh ground, or on the same ground well manured, and each cane cut down close to the ground, leaving only one eye above the surface; and in October they will produce an abundant crop. The varieties of *Merveille de Quatre Saisons*, on the contrary, do not require to be removed, and also afford abundant crops. The Hybrid Black continues to produce fruit throughout October, and is, as we have stated in former reports, a cross between the Bramble and the Raspberry, the fruit possessing the fresh, piquant flavour of the former, with the tender flesh and juiciness of the latter.

A very large bunch of *Black Barbarossa* Grape was shown by Mr. Turner, gardener to James Hill, Esq., The Rookery, Streatham, which was much admired, both for its size and the fine colour of the berries.

Besides the fruits mentioned above, there were miscellaneous collections of Apples and Pears from many other quarters; but to particularise the whole of them would occupy more space than we can afford. They will, doubtless, be all fully noticed in the next number of the Society's "Transactions." We may mention that the most important of these were contributed by Mr. Tillyard, of Heckfield Place, Hants; Mr. Saul, of Stourton Park, Knaresborough; M. G. Thoyts, Esq., of Sulhamstead; and Dr. Davies, of Pershore, with some specimens, also, from Mr. Whiting, of the Deepdene, and Mr. Rivers.

The following gentlemen were elected members of the Society:—

JAMES SULLIVAN GREEN, Esq., Hill Glanworth, Fermoy.

JOHN CRAKE, Esq., Datchet.

WILLIAM CATHROW, Esq., Stoke.

MR. WILLIAM HILL, Keele Hall Gardens, Newcastle, Staffordshire.

KEELE HALL, STAFFORDSHIRE.

HAVING recently been on a trip into Staffordshire, I beg to refer to my note-book, from which, I think, I can make some extracts which will interest the lovers of good gardening.

Keele Hall, the seat of Ralph Sneyd, Esq., is about

four miles from Whitmore station, on the Great North-Western Railway. Mr. Sneyd, the proprietor, who is unmarried, has spent many years in beautifying this fine place; and although some of its features might possibly be after-thoughts, yet, as a whole, it carries a bold impress, and shows unmistakable signs of that singleness of purpose which is of so much importance both in landscape-gardening and garden architecture. The original mansion has been recently pulled down—not a vestige left; and a new mansion is in course of erection on the same site. The old pile was Elizabethan, I believe, and the new one is to be of a similar style, or one closely approximating it, and, I understood, was contracted for by the Messrs. Paton and Co., of Ayr, in Scotland. On approaching the lodge-gate from the Whitmore station, we meet with a very long and straight avenue, probably nearly a mile in length. This leads to a pile of stabling, which constitutes an excellent terminus; and the avenue, as descending by a regular though slight incline from the pile of stables to the lodge, the approach possesses much dignity.

The general landscape in this part of Staffordshire is very interesting, and has more of the beautiful than the picturesque. The country is altogether a series of undulations, and the varying elevations running into each other with ease and freedom create much diversity in the outline. The whole is agreeably wooded, and the planting, originally carried out by Mr. Sneyd himself, was dictated by sound views as concerns the general scenery. I have seldom, in the course of my experience, beheld grounds so rich in planting; the noble evergreens alone, most of which appear to have been planted nearly a score years since, and are now in the height of their pride, being worth a journey of a hundred miles or more to inspect. But Mr. Sneyd has most extensive wood or plantation-walks, quite of a labyrinthine character; for they traverse the woods in various directions, yet so judiciously managed, that seldom can a second walk be seen from that occupied by the perambulator. How different the effect of this from some places we may see, where the designers would appear to consider these breaks in scenery as matters of particular ornament in themselves. These wood walks at Keele proceed to a very considerable distance, and are, for the most part, embosomed amongst groves of thriving Oak and other valuable timber-trees, the ground beneath being generally an excellent cover, and exceedingly rich in Holly, which, as an under-growth, thrives here in a most admirable way. It is particularly interesting to the perambulator who has a relish for Nature's beauties to traverse these diversified walks; at every step something fresh; new combinations by means of stolen views through tortuous glades or vistas, and finely-undulating ground, turn which way he will; the whole wooded almost to profusion with healthy-looking timber. The park is very interesting; but I really would rather point to the rich plantations before alluded to. One thing I may name, and which is indispensable in all woodland scenery of importance. There is a most interesting lake of a winding character, which ever and anon greets the eyes of the spectator in proceeding along these beautiful wood-walks. Its extent I did not learn; but it is no "capability Brown" affair—it is all nature: no art can be discovered here, although, I suppose, a work of art originally. Ever-varying banks with deep indentations, which astonish, when we consider the narrowness of the stream, and planting which here and there juts out, as if desirous of casting its deep shadows and delicate tracery in the stream beneath—these are its features. The only thing we could desire would be a huge Weeping Willow occasionally, and a bouncing swan or two sailing on the surface of this interesting piece of water.

I will now turn to the home pleasure or ornamental

ground, and, after pointing to its peculiar features, take a glance at the practical gardening of Mr. Hill, the head-gardener, the last possessing matters of high consideration. Here the very soundest practice in good English gardening may be seen.

In the home ornamental ground is one of the most noble avenues of Chestnuts I have seen for some years; it is not simply the extent of the avenue, but the character and position of the trees, and the site they occupy, which are striking. I did not take their girths, for Mr. Hill, whose time I had already taxed a good deal, was exceedingly busy, and I was not willing to trespass much farther on his civilities. These Chestnuts are situated near a long and most dignified promenade, which overlooks the garden from some twenty to thirty feet in height, and is bounded by a parapet wall, which would be none the worse for a few architectural embellishments in the shape of massive vases here and there. Such might be made to hang down with Ivy, Cotoneasters, prostrate Junipers, and a score other things, if to be subservient to the style on the higher level; or, taken as a foreground to the picture beneath, might be "lighted up" with Scarlet Geraniums, Fuchsias, &c. There are two of the most venerable and majestic Scotch Firs in company with the Chestnuts that I have ever seen.

Holly hedges here form one of the most important features. A hundred yards or more adorn the ground, about twelve feet in height, covered uniformly from the base to the apex with glossy foliage of the darkest hue; the whole a perfect pyramid, possessing a base of about five feet or more in width. Mr. Hill is a famous hedge manager, and whoever calls here may learn a useful lesson.

The evergreens through the shrubberies and woods here are astonishing both in number and character. Doubtless many hundreds might be counted of the most magnificent Hollies, Portugal Laurels, Yews, Hemlock Spruces, and hybrid Scarlet Rhododendrons, all from about nine to twelve feet in height, and as much in diameter. The Scarlet Rhododendrons are monstrous specimens; and it does appear profuse indeed, to see scores of such noble trees in the mere wilds. What they call Hodgins's Holly is here found in quantities. This tree possesses a magnificent character of foliage generally, the leaves being of enormous size as compared with our ordinary Hollies. This kind should be much encouraged by all lovers of noble-looking evergreens. Many fine thriving Deodars are scattered about the grounds, and some of the freshest-coloured Araucarias, about fifteen feet in height, I have seen. There is a most singular-looking Ash-tree in the shrubberies; it possesses a bole of nearly forty feet in length, as straight as any gun-barrel. On placing the eye beneath, and looking at it, the surface seems a perfectly straight line; scarcely one deviation appears.

I must now take a glance at the kitchen-garden, which is equally worthy of notice. The first important feature which takes the eye is the extent of mixed flower-borders; these accompany the visitor along most of the kitchen-garden lines. However much we may approve of and admire the parterre, the ribbon system, &c., there can be no doubt that the mixed border, when judiciously handled, will form an essential of good flower-gardening so long as a healthful taste remains. These borders at Keele are about four or five feet in width, and are, as Mr. Sneyd, I understand, wishes them, brimful of flowers of all hues. But these are not so full, on account of the immense number of plants they contain. It is on the size and character of the individual specimens rather than Mr. Hill depends; and this, beyond all question, is the true spirit in which to make the mixed border. Its peculiarity, as compared with a border thickly studded with little specimens, consists in its possessing a far

superior outline—one full of intricacy; whilst the other plan necessarily carries the sort of even confusion which generally characterises a bed of weeds. When I saw these borders, October 22nd, they still possessed much of the freshness of summer, and looked charming. The garden-walls here possess very thriving and finely-trained fruit-trees, and carry an important appearance, through Mr. Hill's practice of clothing one wall with one family of fruits. This plan is worthy of general adoption, not only for effect's sake, but even for economy of labour; for I take it for granted that the latter is mainly dependent on system. One wall, flue heated, is covered almost uniformly with as fine Peach-trees as I have met with; another, by no means less important, with our finest Pears; the others accordingly.

I may now come to the fruit-houses, but fear I can hardly do justice to Mr. Hill's splendid Grapes. There are two Vineries and one Peach-house in a line, each fifty-four feet in length; these are not trifling matters. One house is devoted to the *Muscat of Alexandria*, the other to the *Black Hambro*, and I do think that there is nothing in this kingdom to excel them; if there is, it would be worth a long pilgrimage to see them. I will not attempt to describe them farther than to observe, that the two houses are uniformly covered with these luscious treasures. Every rafter bears witness to the triumph of system over chance—of principle over rule. The Hambro's are, indeed, *Black Hambros*; not even a half-shade departure from black is here. With regard to colour, I may use an old Arab phrase of former days, as applied to the breed of their horses—"purer than milk." Muscats, also, magnificent; but what I have said of the Hambro's may apply to them; and if any doubts be entertained about their deserving this unqualified praise, I may merely add, that Mr. Glendinning, of Chiswick, the eminent nurseryman, who has made such a noise with his fine Grapes this summer, had called a few days before my visit, and pronounced them most splendid.

The Peach-houses are in capital trim, but at the moment of my visit undergoing a kind of "careening," to use an old nautical phrase: they show all possible promise for next year. Mr. Hill has a very good and economical arrangement as to Peach trellises, which deserves honourable mention: he so manages them as to present a greater degree of surface to the light than by the ordinary mode. By judiciously curving the two trellises, without going so far as to permit the front to injuriously shade the back, he not only accomplishes that important matter of creating a greater surface of wood and fruit, but also, at the same time, affords better facilities for cultivation than is usual. Every portion of his trees may be reached with facility, a consideration worthy of all those who would grow the Peach in-doors. At the back of the kitchen-garden structures is a building to which I would draw some attention. It is a general greenhouse or plant-house, 114 feet in length by twelve feet in width. This house, from its length, has a most imposing effect. But its chief features are, that it faces the north, and is on the ridge-and-furrow principle. Mr. Hill assured me that he finds such a house eminently adapted for a show-house, which, of course, is of an ever-changeable character, the plants being forwarded until they reach blossoming in other structures. There is a back stage in the interior, consisting of three broad descents of about a yard each, and along the front, at the level of the sill of the front glass, is an excellent massive slate shelf, beneath which is the piping which heats the structure. This house was looking very rich for the season; but Mr. Hill cultivates things specially, in order to sustain a continual display. Such houses, which may be called retarding-houses, are by no means common, and are worthy of consideration by those who contemplate erect-

ing new garden structures. There is a nice nursery in conjunction with the kitchen-garden, where considerable quantities of Hollies and other useful ever-greens are grown to supply the plantations.

Many useful hints may be gleaned by young men desirous of rising in their profession from the practices at Keele, and even the most experienced will profit by a visit. Mr. Hill, it may be stated, served part of his time under that clever gardener and writer, Mr. Bailey, of Nuneham, and finished off, I understood, under Mr. Fleming, at the celebrated Trentham Gardens: no marvel, therefore, that Keele Gardens are worthy of notice. I may here express my thanks to Mr. Hill for his civilities, and the frankness of his conversation about gardening matters, for he is no mystery man.

ROBERT ERRINGTON.

KINGSTON NURSERY.

(Continued from page 90.)

No. 3.—This is the old Calcutta-house, which is now devoted entirely to those Orchids and Ferns which need the greatest heat all the year round. The Messrs. Jackson excel in the cultivation of both families, and make more money of them than people at a distance could believe. To see the quantity of "cases" from foreign parts you might think they were in partnership with the sea serpent for enriching our collections; and I have heard more than once that, were it not for this firm, Mr. Stevens might shut up shop altogether in the Orchid line. All that I can add to that, from living next door to them, is, that they have an enormous stock of Orchids and Ferns in the highest state of cultivation; that they have not yet hit on a way to grow Orchids from seeds; but that they manage to raise the rarest and best kinds of Ferns from seeds in great quantities, and with *unerring* success. Those who can get up such Ferns can alone understand the meaning of "*unerring success*." The meaning of our language is not taught in the universities; therefore we must often explain the plainest thing on earth. The seed of Ferns—yes, that is the proper word after all, though botanists call it the spore—is as small as the dust in the sunbeam, and as insinuating. A queen going through a Fern-house when the seed is ripe on a fine day, with "plenty of air" on, would carry off more seeds in number than there are yards in length between Kingston and the planet Jupiter. Then who is to know, when he gathers the seed of one kind of rare Fern, that he has not also collected the seeds of fifty kinds of the very commonest from one and the same *leaf*? Yes, again, that word *leaf* is the proper word; *frond* is only a bastard, unbotanical, and pedantic contraction of the word *frondeus*, leafy, or full of leaves. Leaves or fronds of Ferns in the seed season are so dusted over with Fern seeds from all kinds in the house, that few gardeners can get up seedlings of Ferns "*unerringly*," as they do here. The seed-pods of most Ferns are more or less roughish, and offer a ready lodgment to the flying-about, dust-like seeds.

The way Messrs. Jackson manage to get up true seedling Ferns here is to separate the mother plant for awhile before seed-time, then to sow the seeds in garden-saucers in peat and sand, and cover them with glasses, which exclude all other seeds. Some kinds take a long time to vegetate and make plants; others are "up in no time;" and, should the latter get among the former, it is easy to see the difficulty, and also to see how easily a rare kind might be lost altogether.

I could learn the names of many hundreds of Ferns in this Nursery; but I never try, for fear of being a "perfect" gardener, as most of them "forget themselves" very often. I asked the names of a few of those kinds

which struck me as being quite new to the eye or very pretty to look at, and I here give a "list" of them:—

FERNS VERY NEW, VERY GOOD, OR VERY CURIOUS.—*Adiantum macrophyllum*, *A. pentadactylon*, *A. alatum*, *A. caudatum*; *Asplenium Belangeri*; *Cibotium Barometz*, *C. Shidei*; *Cheilanthes viscosa*; *Dictyoglossum* (rather *Hymenodium*) *crinitum*; *Diplazium giganteum*; *Glichenia microphylla*, a duck of a Fern; *Gymnogramma chrysophylla vera*, much better than the common *G. pulchella*; *Platynerium stemmaria*, fine; *Polystichum mucronatum*, new and very rare.

Orchids I can discuss at breakfast, luncheon, dinner, and supper any day in the week; but the most out-of-the-way thing which struck me here was to meet with an Orchid to which I gave the first gold medal not many years back, and which I knew had been knocked down since, by the relentless hammer of Mr. Stevens, for seventy-eight guineas. After that his head was cut off—not Mr. Stevens's head, for we cannot do without him anyhow—but the head of the plant; and now for one head "off" there are four heads "on"—remarkably clear, clean, intelligent heads they are too. The kind is *Aerides Schraederi*.

As you enter this house the centre of the middle stage is before you, which is a level slate stage, covering over tanks and hot pipes. Here the entire end of the stage from right to left, and several rows deep, is occupied with *Aerides* and *Saccolabiums* in large pots, and in the most healthy order; *Aerides crispum*, three feet high, and several varieties of it; *Fox-brush*, very stout, eighteen inches high; *Flavidum*, an extreme variety, thirty inches long, and in the utmost health. This kind is said to have actually flower-spikes two feet long, fox-brushed, with flowers as close as in the *Fox-brush* variety. The colour of the flowers is nearly white, like most of them, and the lip is a creamy yellow. One plant of *A. crispum* put out a long, horizontal, stout, fleshy root as an axil to numerous smaller roots, so grown as to form an exact model for a hay-making machine. What a pity that Orchids did not flourish when poetry did!

Several specimens of the different kinds of *A. affine*, with four, five, and six long shoots. *A. nobile*, a rare kind from Loddiges' sale. The flower-spikes of this noble plant are said to be pretty nigh two feet long, and the flowers much after *flavidum*. A fine specimen plant of *Ansellia Africana*, with strong shoots, four feet long, showing for blossom; *Saccolabium curvifolium*, a close-growing kind, with a dozen and a half of leaves on each side of a stem, which is not yet much over twelve or fifteen inches in length. The flowers of this kind are of an orange colour, on long, spreading spikes. Overhead, in cradle-baskets made of rods, were several rows of the finest kinds; also, in large specimens, such as *Saccolabium guttatum*, *Blumei*, and *Blumei major*; *Aerides virens*, *odoratum*, *major*, *superba*, and *affine rosea*; also, *Camarotis purpurea*; *Burlingtonia candida*, *fragrans*, *venusta*, and *decora*, the latter in bloom, and puts one in mind of some *Barkeria*. The body of the flower is of a light colour, speckled all over with purple spots, after the manner of a spotted egg, and the lip advances far in front, is very large for the family, and of snow whiteness—a real gem. A good stock of *Cattleya Aclandiae*, growing more freely than is usual, hanging close to the glass; the rare *Vanda Jenkinsii*; and three kinds of very curious *Bulbophyllum*, from Molmein, with cone-like spikes of purple and yellow flowers. They are part of a cargo which was brought home this season, among which was the rare Fern called *Drynaria quercifolia*, which has the barren leaves spread out like the Elk-horn Fern, now called *Platynerium alcicorne*. This Fern is quite at home here; also, four *Amherstia nobilis*, quite dead, but worth mentioning, as being the first of their kind, I believe, that were shipped from so far east-

wards as Molmein, and other plants from thence of which little is known yet. The Dusty Miller Fern, which pricked up the ears of Fern growers at the last Crystal Palace Show, and found in this house under the name of *Gymnogramma Peruviana farinosa*; also, the Strawberry Fern, *Adiantum caudatum*;—the end of the leafy branch runs out, tail fashion, like the runner of a Strawberry-plant, and there makes a new plant, and so on, and yet it is rare and high priced;—together with fine specimens of *Platynerium grande*, a most appropriate name.

No. 4.—This is another large house of Orchids and Ferns, called the Mexican-house, a span-roof, with a centre path, a broad flat stage on each side, and a very broad shelf overhead. On the latter, all the *Gesneriads* and allied families of bulbous and tuberous-rooted plants are dry wintered, the tops not being interfered with till they are completely dried up—a good example to follow by such as find it difficult to keep their *Gloxinias* over the winter. The heat is from 55° to 60° in winter, unless it be during a very hard frost, when 50° may safely be the highest point. Here are immense quantities of *Cattleyas* in large lumps, as they were recently imported, "breaking well," or beginning to sprout freely. Formerly every newly-imported Orchid was put into the hottest place; but I broke through that rule also twenty years since, and Sir W. Hooker backed me in the *Botanical Magazine* so earnestly, that the practice "took" at once, and now no one puts a dried-up Orchid to the collar at first. A great number of Mexican useful kinds are here. Among them *Cattleya citrina*, generally a very strong grower, is up and doing, close to the glass, just as well as any of them. The secret is out at last; it must have no more water than enough to keep it from shrivelling, and, during the winter, the air of the house is sufficient to do that. *Lalia autumnalis* and *majalis* coming into bloom, *anceps* also. Fine plants of *Trichopilia suavis* and the so-called *coccinea*, which ought to have been called *fuscatum*; but, through that courtesy for which he seldom gets credit, Dr. Lindley adopted this fuscate name into his magazine called "Paxton's Flower Garden," from a foreign collector. *Cynoches*, *Catasetums*, and the allied tribes of hobgoblins peculiar to Venezuela, and all that sea-board which one sees when seated on the Saddle of Caraccas, are also here, and the best British-made bulbs of *Anguloas* I ever saw. *Dendrobes* in all stages, up to the flowering of *Chrysanthum*—not *Chrysanthemum*, recollect; *Oncids*, ditto, from the bird's beak (*ornithorhynchum*), through the sections to the *flexuosum* section, of which *oblongatum*, now in bloom, is one of the best. *Barkerias*, of which *melanocaulon* is the rarest, doing well in a cork saddle, dangling from the roof; *Epidendrum vitellinum* in good bloom; *Warrea Lindeniana* coming into bloom; *Odontoglossum hastatum fuscum*, or *fuscatum*, with a long flower-stem well furnished with side branches; *Cymbidium Masterii* coming up; *Oncidium divaricatum*, *Dendrobium moniliforme*, *Calanthe sciatica*, a grey, violet flower, but not much, all in bloom, with fine blocks of *Dendrobium Jenkinsii* and *D. Falconeri*, the newest of them all, and one of the most lovely-looking flowers among the Air-plants; very long shoots, very slender ditto, very short-jointed, and gouty at the joints, very easy to propagate from side offsets, not bad to grow, and easy to bloom. It was introduced from Bhootan last spring, and sold by Mr. Stevens.

No. 5 is a span-roofed house, full of *Chinese Azaleas* for trade orders, and *Daphne Indica rubra* and *hybrida*, all in good bud for immediate forcing. No. 6 is also a span-roofed house, full of young *Camellias* quite as full in bloom-buds.

No. 7 is a lean-to and dry propagating-house. The damp propagatory is opposite to this. In this dry house at this moment is the most extraordinary plant in

Europe,—a double white *Chinese Primrose*, one yard in diameter all but two inches: I had it measured on purpose. It is in a No. 6 pot, and there are twelve plants of the same batch, the smallest of them being just twenty inches in diameter. Mr. Jackson's people were so ashamed of the bad accounts I gave of the London growers of this plant, that they resolved, on the spot, I should eat humble-pie; but you see what a hammering does. I never scold, well knowing that those who do know very little of human nature; but, throw chaff in their eyes, and hammer their ears, and, depend upon it, they will grow *Balsams* for the Crystal Palace as big as the Kingston *Chinese Primroses* which are kept for cut-blooms, and for stock plants to get cuttings from, this Nursery being celebrated for them. There is a great demand for this one article. As I spend a good deal of my time in this house, I can tell the mysteries of it another day.

No. 8 is the soft propagating-house. Here all the soft-wooded plants are propagated over tanks of hot water. The last batch of bedding-stuff cuttings were put in six weeks later than we recommend in THE COTTAGE GARDENER; but then the propagators have little else to do but to attend to them. No more cuttings are made of them here till the turn of the new year, unless it be a rare plant, or one of which they are nearly run out. They say THE COTTAGE GARDENER made such havoc on their *Lobelia speciosa* that they cannot lose one day or a single night with it this whole winter. Another late batch of bedders were all in 60-pots, plunged in cold tan in frames, and quite close to the glass. These were put in at the beginning of October, and consisted chiefly of *Calceolarias*, eight or ten cuttings in a large 60-pot; *Verbenas*, more ditto; *Lobelias*, more; *Ageratums*, not quite so many; *Gaillardias*, ditto; *Phloxes*, about ten cuttings in a 60-pot; *Antirrhinums*, some more; *Tropaeolums*, more and less, according to sorts; *Petunias*, about the average of ten or twelve; *Gazania uniflora*, not so many; *Heliotropes*, ditto; and out of some thousands here was hardly a dead one to be seen. This batch will be wintered in-doors. Enormous numbers of cuttings of single *Camellias* are put in here for stocks, and they hardly lose one out of a thousand. They are in 32-pots, and in sandy loam and peat, with a surface of sand in the usual way. The time for making the cuttings is the middle of September. The mode is to keep them quite close in cold frames, shaded from the sun till the middle of December, or later, if the frost does not come too hard.

The next turn is into the moist propagating-house, and the next into single pots. All kinds of *Chinese Azaleas*, including the yellow *Sinensis*, go in for it with these *Camellias*. Many kinds of free *Roses*, ditto, and all *Roses* if the propagator chose.

Now, who would be a plenipotentiary after all these secrets? or who could believe that my life would be worth insuring after telling them? But I have a secret; I can put a spell on them and wait awhile; and after all this you will hear of the Londoners actually opening their glasses for me, or rather, for you, in the midst of hard frost and snow, as well as in shiny weather.

No. 9 is a lean-to *Azalea* house, full of fine-made specimen plants of all the best kinds of the Chinese breed. The criterion for good condition at this season is brown leaves, indicating a superior degree of ripeness, and a hard, knotty point to each shoot, telling of a sound, solid, sterling flower-bud. How do your small-leaved *Azaleas* look this season?

No. 10 is a large, wide, lean-to *Heath* house, full of specimen plants, all but the front stage of such as *Massonias*, *Tricolors*, *Aristatas*, *Eleganses*, *Depressas*, *Cavendishes*, and such honourable and honoured names.

One plant of *Triumphans* is a tremendous, strong, healthy specimen. On the front stage an assortment of

all the best kinds in equal proportions, not too many of one kind and too few of another; but the great stock of young *Heaths*, *Epacrises*, *Azaleas*, and other hard-wooded plants of like nature, are wintered in long ranges of cold pits, without any means of heating, but chiefly covered with fern. The sides of all the pits here have eighteen inches of fern permanently kept round them. A large stock of *Sikkim Rhododendrons* is also kept in such pits, with the very best kinds of evergreen *Berberis*, as *Trifurca*, *Bealii*, *Japonica*, very fine, with all that race of them.

There are *Wellingtonias* very fine, in very large pots; *Araucaria excelsa*, *Pinus Jeffreyi*, and *Benthamiana*; *Thuja gigantea*, and an improved form of *Pinus insignis*, with longer leaves and better looks. It is called *Radiata*, and is considered a species by some. *Cupressus Macnabiana* and *Lawsonii*, yellow *Rhododendrons*, and yellow *Indian* or *Chinese Azaleas*, and the variegated form of *Pittosporum Tobira*, which ought to be better known.

No. 11 is a very large lean-to house, full of the new French spotted *Pelargoniums*, variegated bedders, and fancy bedders of all kinds; but I must have a whole day for this house after getting over the push in London. Suffice it to say that here, as at the Wellington Road Nursery, and at Clapton Nursery, I was told this was an excellent strain for the trade; that they sold ten French *Geraniums* for every English *Pelargonium*; that *Tom Thumbs* and all the scarlet breeds would pay to be grown into specimens, or large regular plants; in fact, they "grew into money," while English *Pelargoniums* would "eat their heads off" if they could not be sold the first season. There is a variegated new *Geranium* here, which Mr. George Jackson picked up on his travels, which belongs to the Nosegay class, and is the best of them in variegation, and the finest grower of all that strain. Provisionally it shall be called the *Jackson's Variegated Nosegay*; but, as the present call for Nosegays will bring out others of this stamp, a more suitable name ought to be given to it.

No. 12 is another large lean-to house, seventy feet long, and more like a conservatory, full of large plants, such as *Aralia trifoliata*, having three leaves, each a foot long, from one footstalk. *A. quinquefolia*, still finer; *Araucaria excelsa*; large *Cytisus racemosus superbus*, the sweetest and best flower of them; *Myrtus apiculatus*, with the leaf and habit of *Vaccinium myrtifolium*; large *Acacias*, *Indigoferas*, *Correas*, *Epacrises*, *Eriostemons*, *Pimelias*, *Tetrathecas*, *Aphelaxis*, *Adenandras*, *Brachysemas*, *Cytisus filipes*, *Chorozemas*, large *Camellias*, and a good stock of *Acacia Drummondii*, which is most deservedly much called for.

No. 13 is a house with a north aspect, full of large *Azaleas*, *Chinese* and others, some on single stems as standards and half-standards, very good specimens; yellow *Rhododendrons*, well set for bloom; large *Camellias*, *Orange-trees*, *Sikkim Rhododendrons*, which have already grown too high for pits or smaller houses. As a gardener's plant I still reckon *ciliare* as among the most useful kinds from Sikkim. It may be had in bloom by forcing from November till it comes "of itself," at the end of the spring, from cold pits, or from the open ground.

A vast deal of "small stock" is stowed away in all the nurseries for the winter, under the stages of the different houses, in a half-dry stall. Here they never trim or prune such plants till January, and the reason is conclusive—"lest they should break" soon after, owing to the change of temperature from the open air. *Fuchsias*, *Agapanthus*, bulbs, and half-hardy and half-woody flower-garden plants. I saw a large stock of the pretty little bulb *Pentlandia miniata*, lots of two excellent kinds of *Pentstemons*—*Kellermanii*, after *Cobaea*, and the best grower of that strain; and *Wrightii*, after *Murrayanum*, and said to be the best grower of that particular breed, and

a fine bloomer. These two add to the best I named from Clapton, as I mean to be on the look-out particularly for good plants for the mixed beds and borders. In this last hunt I met with four large masses of another new and most excellent *Dendrobium*, called *Macarthisæ*, a match kind for the lovely *Falconeri*. D. BEATON.

AMERICAN APPLES.—Owing to the failure of the Apple crop in Europe, there is a large demand here for exportation, and at least 10,000 barrels of *Newton Pippins*, embracing the best of the crop, will be sent out this fall. One firm here already has contracted for England to the amount of 6,000 barrels. This variety of Apples has the preference over all others, though *Baldwins* and *Russets* are exported to some extent. Shipments this year have commenced early, and all the first quality fruit received in this market up to the 1st of December, of the varieties mentioned, will be readily purchased to send off.—*N. Y. Jour. of Com.*

HOUSES AND HEATING THEM.

To save room I shall endeavour to throw the pith of the queries relative to these into a small compass, without any attempt at arrangement.

MAKING BACK WALLS OF HOUSES USEFUL.—“A SUBSCRIBER” in Scotland has a Vinery planted in the usual way, but thinks he could also get Vines upon the back wall, and wants to know what would answer best.—The *Royal Muscadine* would answer well if it could get light enough. I have seen fine crops of it, and even of the *Hamburgh*, when the Vines on the rafters were from four to five or six feet apart. If the glass of the roof is covered with foliage you will get but little in the fruiting way from the back wall. If openings are left, so that at these openings the sun can get through to the wall unobstructed, Vines, Figs, and even Peaches will do tolerably well. In such cases the back wall should be of a light colour, for the purpose of reflecting back the light as well as the heat. In such circumstances I have seen fine bunches of *Black Hamburgh* with a rich bloom, though almost concealed by the foliage; in fact, even upon rafters it is rare that Grapes colour well unless their foliage protects them from the direct rays of the sun. In Vineries and Peacheries where the glass was too well supplied with foliage to allow much light to reach the back wall in summer, I have seen winter-flowering plants introduced with good effect. In Vineries not much forced, but made to act as green-houses in winter and early spring, you might have a green back all the summer from Camellias or Oranges, especially the former, and a fine mass of flowers all the winter. The increased heat given to the Vines would cause the Camellias to grow freely. As soon as the Grapes were coloured they could be kept cool, and unnecessary foliage removed and abundance of air given, which would ripen and perfect the Camellia buds, as well as the wood of the Vines. If a fair amount of light does not reach the back wall I can hold out no great inducement for planting Vines against it, unless for bringing them down the rafter near the glass. Here, of course, they would obtain the same, if not greater advantages than those planted in front.

HEATING BY FIRE-CLAY PIPING, &c.—“W. B.,” who has built a Vinery twenty-seven feet long by ten feet wide, wishes to heat it by a system combining *efficiency, economy, and cheapness—profit*, not ornament, being his object; fears that hot water would be too great an outlay for his circumstances, and asks whether the fire-clay piping used for sewers, &c., would not suit his purpose.—I do

not think I can add one word to what I said last year on this subject. It is easy to recommend a cheap mode of doing a thing, and that may be efficient too, if ordinary care and precautions are used, though we might have doubts as to the efficiency and economy of that mode, when not the present, but the wear of ten or twenty years were taken into consideration. In such a course of years I believe that hot water would be the most economical and efficient. For the present, and for a few years, if due care is used, I believe that these drain-tiles, about eight or nine inches in diameter, will be the most economical. Before putting them down, however, I would ascertain the difference in expense of these pipes, and what you could get a nine-inch flue built for; because, if you have bricks at your elbow, and these pipes are to be brought from a great distance, the flue may be as cheap as the pipes, and, if so, I should prefer it. Our friend and coadjutor, Mr. Keane, could tell us a good deal of these drain-pipes, even the common ones, and what care is required when they get old. Our friend Mr. Caie, of Argyle Lodge, Kensington, to whom the world is so much indebted for the grouping system, and introducing lines of colour, has long used the common draining tiles for heating in connection with a small furnace; and he told me last year that nothing could suit better where the chief thing wanted was merely the exclusion of frost. If “W. B.” contemplates forcing much, and the expense is much the same, I would recommend a flue in preference to pipes. The furnace in either case must be formed of bricks. If he resolves on pipes, one row will be sufficient, if he does not purpose commencing to start his Vines before March. If earlier, he will require two—one to the extreme end from the furnace, and back again to the chimney over the furnace. In the first case, the chimney may be at the opposite end from the furnace; and if the pipes go round the two ends and the front of the house, that will be quite sufficient. I have had little practice with such pipes, but observation tells me that two things are essential to economy and success. The first is, that a brick flue should proceed for at least four feet from the furnace-bars—two feet more would be better. This will lessen, and next to altogether prevent, the risk of cracking the pipes with heat. The second is, that every twelve or fourteen feet, that is, in the middle and the end of such a house as “W. B.’s,” there should be an open brick pier, wide enough and deep enough to allow the ends of the pipes to rest on the insides of it, and be covered with a flat tile on the top, easily removed at pleasure, so that, with a broom fixed on a rod long enough, you could clear all the soot out of your pipes in a few minutes without at all disturbing them. The cleaner the inside of the pipes is kept the more heat will you get, the more equally will it be diffused, and the less will be the danger of back draughts, explosions from a choked-up pipe, and crackings and escapes from soot burning. Even in flues not cleaned often it is amazing the heat that is lost whenever the soot clings to the inside of them. So far as the bricks of the flue are concerned it acts as a non-conductor of heat, keeping them comparatively cool; but so far as the span-mouth of your chimney is concerned it acts as a conductor for carrying the heat from the furnace into the open air. All flues and smoke-pipes, therefore, from which it is desirable to radiate all the heat possible from the consumption of fuel, should have conveniences for cleaning them quickly and often without pulling them to pieces. The same principle applies to boilers for heating by hot water. Get them encrusted with soot, and you lose heating power in proportion. On this account alone the upright tubular boilers of the Messrs. Weeks, and the retort boilers of Mr. Thompson, have an advantage. In the one case soot can hardly have the chance of forming, and in the

other everything can be cleared off quicker than I write one of these lines. But to return to these earthenware pipes: they may be fastened together with soft, thickish mortar, or even with soft, well-wrought, thick clay. If the heat should make cracks in them for a short time just daub the cracks up as they appear. I have no doubt you will succeed with the precautions spoken of, and I shall be glad to know the result.

TANKS versus PIPES FOR HOT-WATER HEATING.—"G. H." wishes for advice as to which he should adopt for Cucumber-house, stove-house, and structures generally.—I would refer him to previous articles on this subject in our other volumes. I have nothing new to advance. I am rather in favour of pipes, as a whole, for bottom-heat, and top-heat likewise. I should, however, just make it, to a great extent, a question of convenience and economy, and the ease with which materials could be obtained. In the second volume of this work, No. 52, Sept. 27, 1849, will be found a section of a double house, namely, a greenhouse at the back, separated in front by a wall and glass partition from a house in front, sunk below the ground level, and used as forcing house, plant-stove, and Fernery, and heated by a wooden tank covered with stout slate, the tank being heated by a small conical boiler; and, with the exception of iron flow-and-return pipes eighteen inches or so from the boiler, the connection between the rest of the distance from boiler and tank being kept up by lead pipes. Where a wooden tank could be cheaply formed few modes could be more economical. I think the tank is nine or ten inches deep; but four inches, or even three, would be deep enough, as the heat must come from the slate covering. The tank referred to must have been in use about fifteen years, and it is just as good now as the day when it was put up. Even the wood boxes placed over it for holding soil for Cucumbers, Vines, &c., were perfectly sound. I attribute this soundness greatly to the fact that tank and boxes are guiltless of being touched with a paint-brush. These boxes are a standing joke between some painters and your humble servant. Of course, with our friends the painters there is nothing like paint, whatever the state or character of the wood. From moist vapour, syringings, and a dry heat at times, these boards have been subject to almost all possible changes of wetness and dryness, and yet they are perfectly sound. I believe they would have been next to gone, if, when made, the tanks and boxes had been well painted. They who refer to the section will find that the earth does not touch the boxes, and the thin slip of wood which acts as a dividing medium is beginning to decay. Nothing can be more simple and effectual than the heating of these houses. When more heat is required in the greenhouse a sash between the houses is opened, and the desired object is gained.

ARNOTT'S BRICK STOVES FOR HOUSES AND PITS.—"AN OLD SUBSCRIBER" asks ever so many questions about them. I have had little or no experience with them myself. I introduce it here, that one of our co-adjutors, or Messrs. Rivers and Lane, may give us a helping hand. I have no doubt that for many things they will be exceedingly useful. I mentioned last year how Mr. Lane heated a very long pit, or rather, low house, with a brick stove placed inside at one end. This house, however, hangs upon an incline, the farther end from the stove being higher by three or more feet than the end at which the stove is placed. The heat rises and goes along near the glass to the extreme end, and a deep pathway in the middle acts as a drain or a return-pipe, for bringing the cold air back again to the stove. Mr. Lane thoroughly understands the Polmaise theory of the circulating of air; and this house, from its hanging level, presents many advantages in this respect. With this brick stove, and a short iron pipe that conveys the smoke through the back wall, Mr. Lane commands as regular and high a

temperature, when requisite, as if he had a boiler and some hundred feet of piping. Such stoves are, therefore, no doubt, useful to those who do not choose to go to the expense of boiler and pipes. I should prefer, however, that Mr. Rivers, or Mr. Lane, or some other friend who has managed such stoves, should give our inquirer minute details. Were he near Sawbridgeworth or Berkhamstead he had better make an inspection himself.

SMALL FLUE BENEATH THE PAVED FLOOR OF A GREENHOUSE.—I have had many inquiries if one described by me some time ago answered well last year, and have to reply in the affirmative. I got the hint from Mr. Snow, of Wrest Park. The floor of the houses referred to is of brick, and the bricks cover the top of his narrow flue, and you see and know nothing of it, except the agreeable warmth it yields on a frosty day. I forgot the exact dimensions of one in a small house here; but it is about five inches wide; bottom, a house-slate; sides, two bricks on bed; top, slate; mortar on that to receive a tile on the same level as the floor, which is tiled over. In very severe nights the frost has just been kept out, and very little fire does. Were I to raise the temperature high when the frost is intense, I should crack the slates, and pieces coming off them would stop the flue partly. Thin, soft tiles would, therefore, be better than slates, and, if the house was large, the flue would require to be wider. By leaving the space by the side of the flue as hollow as possible more radiating surfaces are secured. This was why I preferred brick on bed to brick on edge, as the sides of the flue not only carry its tile cover, but the tile on each side rests, also, upon it, being hollow for about half its width. Such a small flue is heated in a few minutes, and is never seen. A correspondent that joked us the other week about "gardeners differing" will see that there are many simple modes of gaining a similar result. Now, were the look of a thing no object, and despatch and economy at first the considerations, I should build a little furnace, and use drain-pipes as advised above, or try a brick Arnott's stove, with merely a smoke-pipe. But, though either of these modes would do, I would not prefer them by any means, except for mere economy at first, to hot water from a small or large boiler, in accordance with the place to be heated. Where economy in first outlay and fuel must be great considerations, some adaptation of the furnace and flue will be best for very small houses, until we get, which I believe we shall before long, a very serviceable, small, portable boiler for these places, except such cases where a small house may be easily heated from the kitchen-boiler; and even here the house must be chiefly a greenhouse, as otherwise it would be better to have a boiler for itself.

HEATING CUCUMBER-HOUSE, &c., BY FURNACE AND IRON PIPES.—"W. X. W." has constructed a house for Cucumbers, Strawberries, Kidney Beans, &c.; it is seventeen feet long by thirteen feet wide; has a hipped roof; height not given. About half the width in front is shut off by a wall the length of the house, and sufficiently high to include a chamber three feet in height, and four and a half inch pipes close to the platform that supports the soil for the Cucumbers, and allowing sufficient space for the vines of the Cucumber to be confined there, or to go over the roof of the house. There is a border at the back, and a shelf near the base of the hip roof for Strawberries, &c. The singularities are chiefly two—the door is at one end, and just inside of it is the furnace door, the furnace being placed in the chamber, and communicating with three iron pipes four and a half inches in diameter, passing along the top of the chamber, and acting as a flue, to give bottom and top-heat, there being small doorways in the curb wall, to let heat out of the chamber, I presume, when necessary or desirable. Our correspondent says the house

has cost but a trifle in building, and I am more than surprised at the small quantity of fuel it takes to get a good heat in the bed and in the house. What he chiefly inquires is, what success he is likely to have with Cucumbers, which he wishes to commence early, Strawberries ditto, and what he could grow in the three-foot-deep chamber underneath the pipes? Now, here is matter enough for an article; but I must compress it in a few lines. It is always unpleasant to damp enthusiasm, and yet I fear your house will not always do so well as it seems to do at present. Have you contrived any means by which you can run a stiff whalebone brush, made something like a bottle-brush, through these iron pipes often? If not, they will soon get crusted with soot, and then you will not have so much heat, or you will have back draughts and explosions, which will next to kill your Kidney Beans and Cucumbers, from having your furnace doors in the house instead of outside; or the soot will burn in the pipes, and make them so hot as to kiln-dry the atmosphere, and rob it of its oxygen. The Cucumber delights in a moist atmosphere; but you seem to have no means of giving moist heat, either by evaporating-pans on the pipes or otherwise. The pipes are placed so high, and the bottom of the chamber is so far from them, that you could grow Mushrooms there, or force Sea-kale and Rhubarb in great plenty, or even Asparagus, if you did not mind its being white. Had you shutters to go inside your chamber, dividing it into two as respects its depth, what you grew beneath would be kept cooler; and, provided you kept the upper side of these shutters covered with moss loosely, and in as damp a state as possible, you might also obtain damp heat for your Cucumbers. You seem to have no openings from the chamber to the front house, and the want of that would have a tendency to make a stagnant atmosphere there. Make an opening opposite each light at least; do the same at the top of the chamber in the curb wall, leaving a slide or plug to regulate the heat at your pleasure. At the bottom of your chamber, or as low down as your shutters—and these, if you have them, sloping to the curb wall—have another opening made in the small wooden doors of your place, and left open always. Then, as the heat escapes at the top openings, cold, dried air will be drawn in at the lower openings, be saturated with moisture, and heated by the pipes, and pass out again. Evaporating-troughs on the pipes will also be a great advantage. By such modes, and great care never to have the pipes too hot, you may succeed; but your labour and care would have been greatly lessened had you used your pipes in connection with a small boiler, with the power of moistening the atmosphere at pleasure. If you succeed at all with Cucumbers there will be no difficulty with Beans. With Strawberries it is different. With a heat suitable for Cucumbers you can only swell them after being set. If you try them early, and place them in a Cucumber temperature at once, the flowers, if they come, will most likely all go blind. We shall be glad to know how you succeed, and how far you adopt any of these suggestions. Your great difficulties will be keeping your pipes clean, and not overheating them, and securing a moist atmosphere, with a due degree of circulation in it. R. FISH.

MESSRS. J. WEEKS AND CO'S ONE-BOILER SYSTEM.

ONE of our engineers has just returned from a gentleman's place, where we have been fixing an apparatus that really does wonders. It is at Lord Bridport's, Cricket St. Thomas, Chard. His Lordship has got some very extensive ranges of hothouses of various descriptions, only the greater part of which was heated by hot water from eighteen various boilers! All these eighteen boilers were considered good

and efficient, and his Lordship, as well as his gardener, Mr. Davis, were satisfied; submitting, as a matter of course, to the having to light eighteen fires, and to the nuisance of so many chimneys. But what a change has now taken place! How seriously now would both Mr. Davis, and his Lordship also, cry out against such a nuisance as so many fires and so many smoky chimneys! The whole of those houses, and more than all of what was formerly done, is now done effectually by one of our upright tubular boilers.

We will now explain to you the way which Lord Bridport adopted before he ordered this *one boiler* of us. His Lordship paid frequent visits to our nursery, where houses to the extent of 1000 feet are heated by *one boiler*. He also went three or four times to Messrs. Edward Henderson's nursery, where houses to the extent of 960 feet are heated by one boiler. His Lordship at last convinced himself that the principle was good, and he made up his mind to adopt our one-boiler system to about one half of his hothouses. It was done, and the result was so satisfactory, that his Lordship expressed his astonishment at the wonderful power of the boiler.

Our engineer was then still at his Lordship's place, Cricket St. Thomas, and, in reply to an inquiry from his Lordship, the engineer having assured him that he was confident the boiler would heat the whole, and heat them all well, his Lordship desired him to inform us that the boiler was then fixed, and heating, in a most satisfactory manner, various ranges of forcing-houses 700 feet in length; but that there were situated in the immediate neighbourhood various other hothouses, to the extent of upwards of 800 feet more, and to have our opinion if the boiler would do the whole.

In reply we begged that his Lordship would have the whole connected; and that so confident were we of success, that we would warrant the boiler to do the whole thoroughly and efficiently, and to his Lordship's satisfaction. His Lordship assented, and the whole is now done, the *hot-houses* in various ranges measuring in length 1500 feet, and the pipes heated by this one boiler measure 10,000 feet long, and one of the houses, fifty feet by twenty feet, is situated 438 feet from the *one boiler*.

Now, facts are stubborn things, dispute them who may. Lord Bridport, and Mr. Davis, his gardener, are indisputable references, and those who like can go and see the one boiler doing all the work here stated; others who like can write to them. We do not, as yet, actually refer to his Lordship, because we have not positively had his formal sanction so to do; but we think his Lordship will, with pleasure, answer any inquiry. At all events, we will take the liberty of saying that any one may apply to Mr. Davis, the gardener.—J. WEEKS, *Chelsea*.

THE LADY DOWN'S SEEDLING GRAPE.

THE opinion I ventured to give of *Lady Down's Seedling Grape*, and which you were good enough to insert in THE COTTAGE GARDENER, was only a qualified one, formed upon slender and insufficient data. I beg, therefore, to say that I have just paid a visit to the garden where it is this year fruiting for the first time, and I am in justice bound to say that the condemnation passed upon it was premature and unmerited; but that opinion was founded solely on a sample of some berries which were sent me two years ago.

As I consider, therefore, that the sample was merely indicative of bad cultivation, I may observe that the fruit I have now seen was, in many respects, deserving of praise. The berries are large, oval, and covered with a fine bloom; and, though the bunch was not yet ripe, the flavour was decidedly good. The skin, certainly, is thick, and it seems to require considerable time to ripen; but it is a fine, fleshy Grape, and will, I engage to say, keep as long as any late variety. It appears, also, to be a good setter and free bearer; but it requires another season or two to speak decidedly of its habit in this respect. Upon the whole, I certainly think that where there is plenty of room it is well deserving of a rafter; and, to get it in perfection, perhaps it would be as well to plant it by the side of a *Muscat*.—H. M., *Sleaford*.

NOTES UPON SOME NEWLY-INTRODUCED CONIFERS COLLECTED BY MR. HARTWEG IN UPPER CALIFORNIA.

By GEORGE GORDON, A.L.S.

It has been known for some years past, from dried specimens and other memoranda brought home by the late Dr. Coulter, that several very desirable Firs were to be found growing on the mountains of Upper California, some of which were of gigantic stature and well suited for the climate of England; and as Mr. Hartweg, when in the service of the Society as collector in that country, succeeded in procuring good seeds and specimens of most of them, which he brought with him on his return to England in June, 1848; and as a large quantity of the same have now been distributed to the Fellows of the Society, either in seeds or young plants, some account of the different kinds may be found servicable, particularly as the names under which some of them were distributed will require to be altered, in consequence of their having previously had other names assigned to them by the late Professor Don; but as Mr. Don's materials were very imperfect, so his

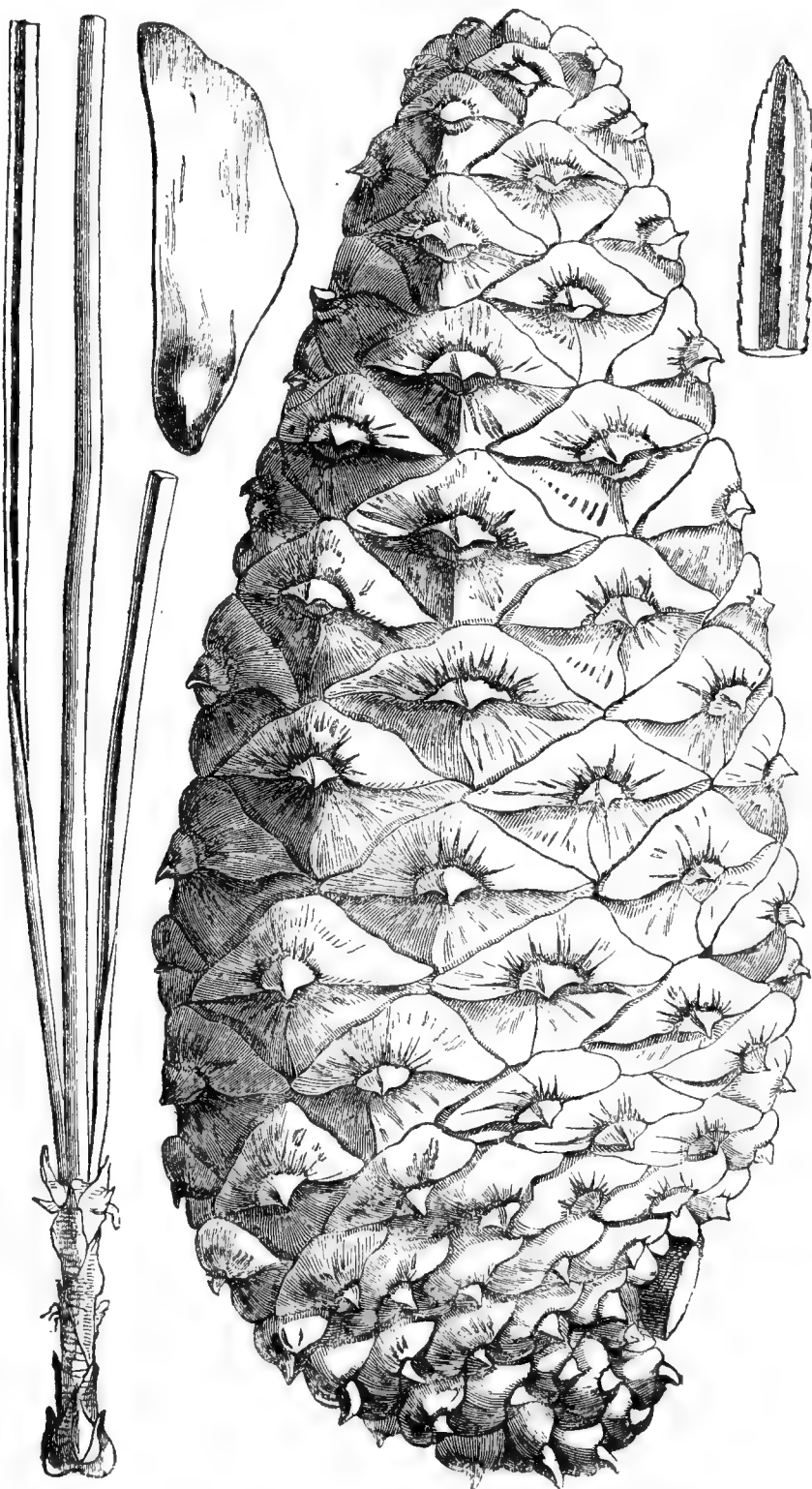
descriptions were defective and inaccurate, which led Mr. Hartweg into the error of giving new names to kinds previously published. As Mr. Don's names have priority, I propose in the present instance to cancel such of Mr. Hartweg's names as require it, and to rectify Mr. Don's descriptions.

No. 1. PINUS BENTHAMIANA. Hartweg, in Hort. Soc. Journ., vol. ii. p. 189.

Leaves in threes, thickly set on the branches, dark green, and resembling those of the Pinaster, but much longer, usually 11 inches in length, very stout, rather flat, with a slight elevated rib running along their inner side. Sheaths partly persistent, nearly an inch in length on those of the young shoots, slightly shaggy, except at the extremity, where they are very ragged or torn. Seed-leaves on the young plants from seven to eight in number, and rather

long. Branches rather numerous, very stout, spreading, and rather irregular, with the bark rough. Buds large, dark brown, much imbricated, and destitute of resinous matter, or nearly so. Cones in clusters of three or four together, slightly pendulous, and quite straight, six inches in length, and two and a half broad at the widest part, which is rather below the middle; the base is unequal sided, owing to the numerous very small scales there, curving to one side, and forming a kind of hood round the base of the cone, which is quite sessile. Scales largest at the widest part of the cone, which is about one-third from the base, then diminishing gradually towards the point, which is rather blunt; those scales nearest the base are very small, particularly the first four or five rows, and are more elevated in the centre, which is terminated by a stout broad point; the larger scales are rather thin and nearly flat, $\frac{3}{4}$ of an inch broad and $\frac{1}{2}$ an inch deep, with a slightly elevated ridge across the middle of each, which is terminated in the centre by a very short stout spine, quite straight: each cone has from thirteen to fifteen rows of scales. Male flowers large, cylindrical, and in large compact clusters; each scale contains within it two seeds, which are rather below the middle size; but with wings rather more than an inch in length and half an inch in breadth.

This noble Pine, which seems to be entirely a mountain species, sometimes attains the height of 200 feet, with a stem 28 feet in circumference. Mr. Hartweg first met with it on the mountains of Santa Cruz, a coast range running due north across the bay from Monterey, and distant by water about 25 miles, although 60 miles by land; afterwards he found it in the Sacramento country, growing upon the ridge generally termed by emigrants from the United States, the Californian Mountains. Mr. Hartweg says, "After crossing the Chuba river you pass the prairie, and enter the mountains near Bear Creek, where you have to pass through an interminable wood of *Pinus Sabiniana*; and in ascending the gradual acclivity of the mountain you lose the region of *Pinus Sabiniana* and enter that of *Pinus Benthamiana*, which seems to be characteristic of the upper region." Some trees of this noble Pine attain an enormous size; the largest which Mr. Hartweg measured in this locality was 28 feet in circumference



Pinus Benthamiana.

and 220 feet in height. It generally grows in masses or intermixed with a few solitary *Pinus Lambertiana*, which is of equal dimensions in these regions. The lofty mountains surrounding Bear Valley are also well wooded by *Pinus Benthamiana*.

It was named by Mr. Hartweg in compliment to George Bentham, Esq., late Secretary to the Society. There is little doubt but it will prove quite hardy, and a very valuable timber in England.

No. 2. *PINUS RADIATA*. D. Don, in the *Linnean Trans-*

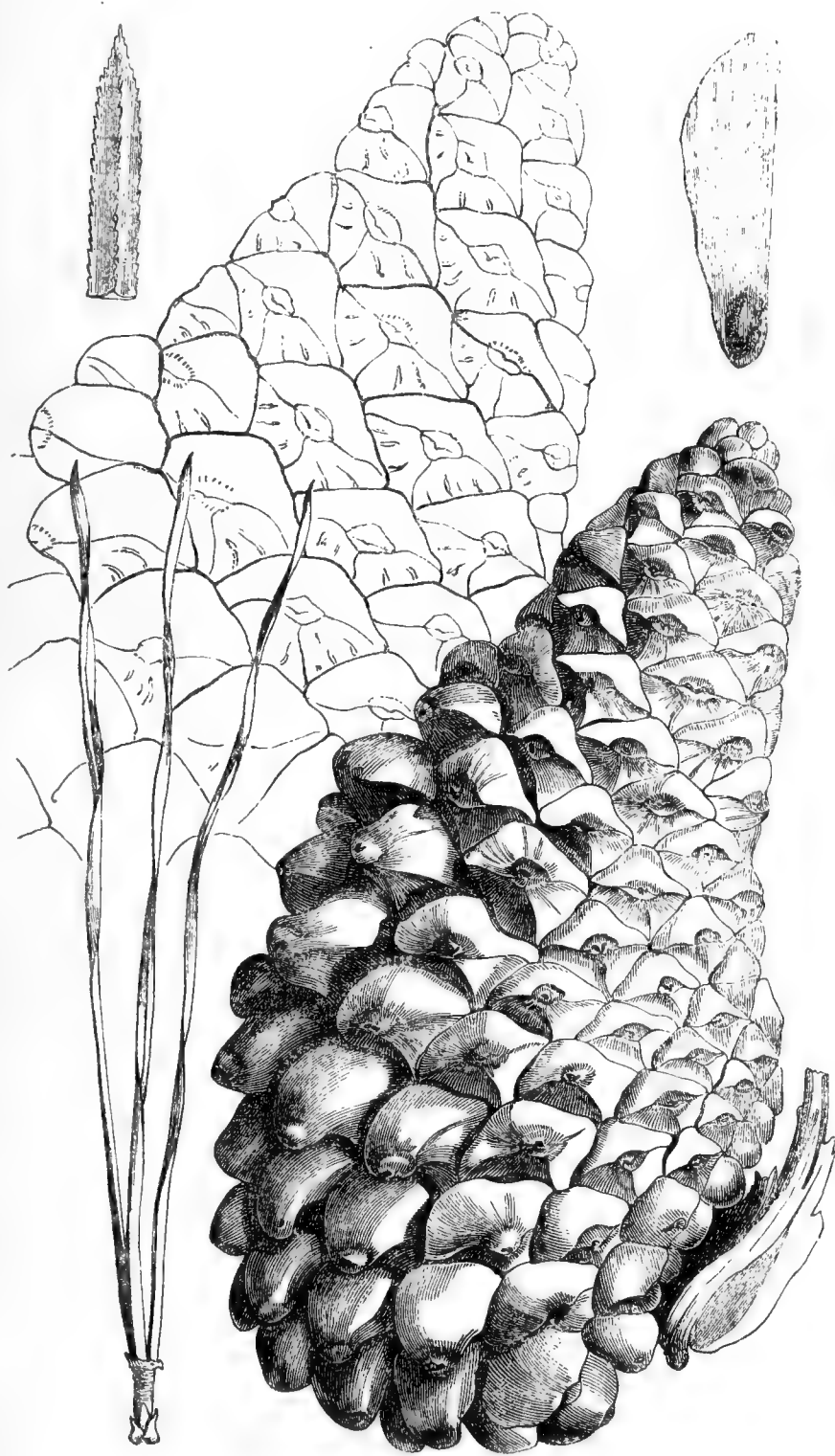
actions, vol. xvii. p. 442; and *Lambert's Pinus*, vol. iii. t. 80. SYN. *Pinus insignis*, variety with large Cones, Hartweg, *Journal of the Hort. Soc.*, vol. iii. p. 226.

Leaves in threes, very slender, twisted, dark green, thickly set on the branches, and from three and a half to four inches in length upon the wild specimens. Sheaths short, smooth, one-fourth of an inch in length on the young leaves, very much shorter on the older ones, and only partially persistent. Seed-leaves on the young plants from seven to eight in number, rather long and slender. Branches com-

compact, numerous, rather regular, and slender, particularly the lateral ones. Bark, light brown, and rather smooth. Buds small, numerous, imbricated, and full of resinous matter. Cones, in clusters three or four together, rather conical, very hard, slightly incurved, pendulous, and of a glossy light brown colour, six inches long, three and a half broad near the base, which is uneven as well as the sides, the outer side being much the longest. Scales radiant, largest at the external base and down three parts of the outer side of the cone, deeply divided, much elevated, and prolonged into a blunt pointed nipple, half an inch in length and three-quarters of an inch broad—those scales nearest the base being bent backwards; the others more or less convex, widest at the base, bluntly conical, slightly angular, and terminated by a blunt point; the scales on the inner side of the cone and for four or five rows round the point are very much smaller, quadrangular, slightly elevated, with their points quite flat or slightly depressed. Each cone contains from fourteen to sixteen rows of scales, within each of which are two small nearly black seeds, with a very rough shell, and wings one inch long and three-eighths of an inch broad.

This beautiful Pine resembles *Pinus insignis* in some respects, but differs very much in foliage and cones; the leaves of *P. insignis* are longer and stouter than those of *P. radiata* on the wild specimens, while the cones of *P. radiata* are nearly three times the size of those of *P. insignis*, with the scales very much more elevated. It was first discovered by the late Dr. Coulter in Upper California, in lat. 36°, near the level of the sea, and almost close to the beach, growing singly, and attaining the height of 100 feet, with a straight stem feathered to the ground with branches. He says it affords excellent timber, which is very tough and admirably adapted for boat building, for which purpose it is much used at Monterey. Mr. Hartweg met with it on the descent towards the sea on the mountains of San Antonio, sixty leagues south of Monterey, forming a small wood extending along the beach, where the dark grass green of its foliage formed a great contrast with the parched up vegetation around it at the time.

It will be as hardy as *Pinus insignis*, and well adapted for planting near the sea coast.—(*Horticultural Society's Journal*.)



Pinus radiata.

THIS YEAR'S FAILURE OF ORCHARD FRUITS.

It is seldom that any important crop presents such extreme features as those which orchard fruits have done in the present season. Orchards which to all appearance ought to have produced an excellent crop, are, in some cases, without a single specimen of fruit, while in others the whole returns will not average one apple per tree.

This, unfortunately, is the general state of things around here this season; but there are some few exceptions, where solitary trees have a moderate crop, and some small plots are tolerably loaded; but all the extensive growers have failed, the few Apples there are being amongst the cottagers, or nearly so, and the cases where the crop

was moderately good were not always favoured by shelter or other outward circumstances; but the failure seems to have been directed by an unaccountable capriciousness, which only left a solitary small plot of trees here and there, in some cases pretty well loaded, in others indifferently; but the crop, as a whole, is nearly a total failure. The plots where there have been fruit are so small in extent, that I only mention them to show that the failure has not been total; but I am not aware of any orchard exceeding a couple of acres which contains any fruit worth mentioning; consequently, Apples are selling at very high prices, and for prime lots fabulous sums are reported to be given. The general grower is a heavy loser, and I have heard of one who offered his whole growth of forty acres at one penny per acre, and I know plenty of others not worth more than that sum. On the other hand, a small grower, occupying little more than one acre, refused a hundred pounds per acre for his growth, although his neighbours' within a quarter of a mile were total failures. Even the early kinds, as *Codlins*, and some other inferior Apples, which generally bear well, have mostly failed this season.

It would not be of much use recording failures or losses if something might not be learnt by the recital, but in the present case there seems little to learn; for, serious as the loss has been to many, there did not seem any mode of preventing it, as it was equally fatal in all soils and situations. The few places escaping might, perhaps, be favoured in some degree, as to shelter, at the precise time when "the blight," as it is called, visited the trees in May. But every place so sheltered was not equally fortunate, so that we are at a loss to account for it on any of the known laws applicable to ordinary cases of failure. Neither can we trace it back to any lack of vigour in the trees, arising from imperfect ripening of the wood last year, for the crop then was light, and the autumn not unfavourable; and although the month of May was dull, and much colder than usual, it was more free from actual frosts than it usually is, and, consequently, that much-blamed source of failure could not be regarded as the one applicable this time.

Unaccountable as it may appear, it is nevertheless true, that many eminent fruit-growers, who are old enough to remember the crops they witnessed in years gone by, insist upon it that either the climate must be undergoing some alteration, or that some other change is going on, which has rendered it impossible for the Apple to bear so well as it did fifty years ago. By this it is not intended to confine their remarks to the variety grown, which we all know must be deteriorated, but that Apple orchards in general do not produce so plentifully now as they did in the beginning of the present century; and certainly the number of failures would seem to warrant that assumption, for some orchards of great promise have borne very little fruit for many years, even where they seemingly possessed every requisite likely to make them do so; and assuredly the present generation does not lack skill nor enterprise in the cultivation of orchard fruits; consequently, the change, if change there is, must be of that natural kind over which the cultivator has no control.

There is a general opinion abroad in many places that trees which bear a full crop one year are not likely to do so the next, but that those not having any crop at all are likely to bear well the ensuing season. The plausibility of this theory is often verified, and some varieties are noted for bearing every second year. Still this alternation is liable to be broken into by other circumstances, and all, or nearly all, have shared alike this season.

There is a feeling becoming rather general here, that either the longer prevalence of easterly winds, or some

other cause of that sort, acting on this part of Kent, has tended to destroy the prospects of the fruit grown during the last few years, to an extent not known in years long since gone by; but, on examining my register of the weather during May in the last seven years, I do not see any reason for attributing the recent failures to that source; and as it is evident the mischief must all have occurred during that month, I give a few rough notes indicating the number of days in which the wind was east and north-east, and the general features of the month.

	WIND.		General Remarks.
	East. No. of Days.	North-east. No. of Days.	
1850	1	9	Dull and cold in middle, end warmer.
1851	0	11	Dry and chilly, some frosts in beginning.
1852	0	11	Tolerably fine, after some sharp frosts the first week.
1853	6	13	Dull, cold, and wet; end finer.
1854	2	4	Generally dull and cold, with some heavy rains.
1855	0	14	Generally dull and cold; things late.
1856	1	7	More remarkable for the great quantity of rain that fell than anything else; in other respects the weather medium.

From the above it will be seen that the May of 1856 did not differ much in general features from the same month of former years; but somehow the Apple and Pear crop became a total failure, and the trees all but killed, as many that were expected to be in vigorous health had not a single leaf on them by the middle of June; and though they afterwards put forth leaves, it was evident the constitution of the plant had undergone a shock which will hasten its ultimate decay. It is, however, surprising how well some of them look again; and though they are later than usual in ripening their leaves, still there is hope of the buds that are set being perfect. *Plums* did not suffer so much as *Apples* and *Pears*; but *Filberts* were, in many cases, as bad, and in some places the small fruits also fell a victim to the same misfortune, but generally these were tolerably abundant.

As the failure this season seems to be general throughout the kingdom, it is useless seeking for any local cause here; neither does it seem likely that any correct notion of its cause will ever be obtained. Suffice it, therefore, to urge on those having large breadths of fruit plantation to use the knife freely, as it is likely the super-abundance of bloom-buds set will be all the better for a thinning. The spade and mattock might also be beneficially employed in a like way, for many orchards are ruinously thick; and be assured the best way to secure a crop of such fruits is to do well by the trees the preceding year, as to that cause may very likely be attributed the more general success of the cottager's trees this season. As a tree in vigorous health can more easily resist the attacks of insects and other diseases than one in a weaker state, and a super-abundance of blossom is also objectionable, do not spare the knife and saw where the specimens are large and seemingly overloaded with fruit-buds, as it is likely a little attention that way may be of service, not next season only, but in after years as well.

J. ROBSON.

NOTES FROM PARIS.

IN the *Revue Horticole* there is a note by M. Pepin, of the *Jardin des Plantes*, on a new variety of *Pinus sylvestris*, called *Bujotii*, in honour of its raiser, M. Bujot, nurseryman of Chierry. This variety was found among a number of young plants in 1843, and it is said to be well suited for planting on lawns or about pleasure-grounds.

P. sylvestris Bujotii is described as having a close, upright habit, with short branches. The leaves are about the same length as those of the species, but they are simple and much undulated, as those of *P. laricio*. The young leaves at the end of the shoots are shorter, straight, and glaucous. They resemble the leaves of *P. cembra* a good deal. The largest examples of it mentioned are about three feet high, and these are growing in the nursery of M. Morel, jun., at Bugny. It is propagated readily by grafting the young shoots on stocks of *P. sylvestris*. The grafts grow slowly, and the general form of the short, compact branches is said to be symmetrical and agreeable. M. Pepin thinks grafts would succeed on the *P. Austriaca*, and also on *P. laricio*.

Sometime ago the *Société d'Acclimatation* received a communication from the Princess de Belgiojoso (a foreigner at present residing in Paris) respecting an Asiatic variety of *Melon* which is not known here. Several samples, grown in Paris, of the novelty in question, were forwarded with the Princess's communication, which has been published in the last *Bulletin* of the Society. Her Highness says:—

"These Melons, of a variety which I have seen nowhere, either in Asia Minor or in Syria, used to be sown in the open ground in my garden in Asia, by a Greek gardener from Saffrau-Bolo, who used to get his seeds from Angora. They used to come up freely and very good, almost without culture, or, at least, without more attention than was required by Gourds and Cucumbers. It was the fruit for which I had the greatest predilection, and, indeed, if it is eaten at its real point of perfect maturity, just before it begins to show some signs of putrefaction (not desiccation), that is to say, when it becomes soft without diminishing in weight, or withering at the outside, I consider it incomparably superior to all other Melons. It is full of juice, and makes of itself a delicious beverage; but it requires to be sweetened with sugar.

"The seeds which I sowed in my garden here (Rue Mont-Parnasse), were about two years old, and by some oversight they were not sown till very late—near the end of May, if I am not mistaken, and my gardener sowed them, mixed with seed of ordinary sorts, under frame-lights.

"Notwithstanding these disadvantages, some of my little Melons were ripe by the middle of August. One of the secretaries of the Turkish Embassy who saw them at my house recognised them at once, and he says that he has frequently seen them at Constantinople, where they are grown under glass; but they are so rare, that when any grower of them has been fortunate enough to find a ripe one, he keeps it carefully as an offering to an esteemed friend or person of rank."

Her Highness adds that there are several other productions of the same kind in her garden or farm in Asia, such as the *Melons de Ghéredale*, which keep through the winter, and the flesh of which at last turns to fresh juice of the most exquisite flavour; yet the outside remains hard.

Another fruit mentioned is said to be about the size of a large nut, with the exterior similar to the skin of an Onion, and the flesh quite dry and mealy like a boiled Potato; the taste is, besides, much like that of Vanilla.

The Princess concludes her interesting letter as follows:—

"I much regret not having brought certain *ducks*, which, though wild, could be easily tamed. They are quite red, have a tuft of metallic green feathers on their head, and their shrill cry has something about it which is quite uncommon. But I should first like to be certain that these Melons and fowls are not known and acclimatised here already. I have often regretted my ignorance of natural history, but during my travels in Asia I regretted it more than ever."

M. Borie notices another novelty under the name of *Zetout d'Algérie* (*Iris juncea*, Desf.), which, according to M. A. de Cès-Caupenne, who has tasted it in its native habitat,

is much liked by the Arabs. The *Zetout* in general form looks like a wild *Narcissus*; the bulbous part of it, which is eaten, is about the size of a filbert. It flowers in spring, and this stage of its growth indicates the most suitable time for pulling it up. The bulbs are divested of their skin, and cooked (fried, I suppose), in butter, or boiled in water. When properly cooked, the bulbs are mashed up together like Potatoes, and it is said that they are very mealy, and of an agreeable flavour. In Algeria the bulbs keep well enough in the ground during winter; and in certain places the wild boars burrow in the soil for them. Hitherto the *Zetout* has been allowed to grow wild in Algeria, the Arabs being but little inclined for husbandry. It is more than probable, however, that were it introduced into France, and properly grown, the bulbs would become larger, without losing anything of their delicate flavour. We are informed that some of these bulbs have been sent to the *Société d'Acclimatation*, in order to try if they will succeed in this climate. There can be but little doubt of the result, and we may, therefore, soon have another addition to our long list of esculents.

M. F. Schlumberger, of the Château des Anthieux, has an article in the last number of the *Revue*, in which he enumerates several species of *Cacti* that have flowered with him during the present year; and, as his communication contains several interesting particulars of flowers which are not often seen, a few extracts may have some value for those of your readers who cultivate these curious plants.

Echinopsis salicarius.—Tube about six inches long, green, and furnished with scales, and tufts of dark brown hairs; sepals lanceolate, very numerous, three inches and a half long, narrow at the base, of a dull white colour, and a green line down the centre; petals about three quarters of an inch broad, and two inches and a half long, pure white; stamens yellowish; style short, stigmatic, inserted at the throat of the tube, and having twelve yellowish white divisions. The flower only lasts a day. It is said to look more like a *Cereus* than an *Echinopsis*.

E. cinnabarinus or *Chereaunianus*.—Tube from an inch to an inch and a quarter long, woolly, formed of green scales; sepals clear brown, transparent, separated by a green line; petals a quarter of an inch broad, numerous, in two rows, nearly rounded, and slightly fimbriated. The colour of the petals is of a brilliant deep red. The flower is three inches in diameter at the time of opening. It lasts two days, closing in the evening. The stamens are numerous, and inserted partly at the base of the first row of petals. The style has eight divisions of a green colour, inserted in the stamens. The flower of this species is generally described as of an orange colour; but M. Schlumberger thinks that the authors of that description have seen the flower early in the spring, and in a house; for his plant, which flowered for the second time on the 15th of October, and in a house, had not so deep a colour as when it flowered in the open air in the summer, and yet the colour was bright red, and not that of *cinnabar*.

Cereus multicostatus.—M. Schlumberger says, under this name he grows a plant which is not yet very well determined, but which, he thinks, comes near *Cereus enneacanthus* and *acifer*. Tube green at first, and then changing to orange, four inches and a half long. It is freely studded with *aréoles*, well furnished with white hairs, and having from ten to twelve fine thread-like appendages, which are white at the base and pale red at the summit; sepals from twelve to fourteen in number, and of a bright orange colour; petals numerous, about thirty, in three rows, small; style in eleven divisions of a green colour, which extend slightly beyond the very numerous yellowish stamens. The flower has the colouring of *Phyllocactus Ackermanni*, though with a little less of the orange. This is said to be a truly magnificent flower, which, with M. Schlumberger, lasted ten days without closing at night, and kept fresh and beautiful for nine days together.

Echinocactus acifer.—Flowers about three quarters of an inch in diameter; petals of a dirty yellow colour, with a brown line at the exterior.

E. grandicornis.—Flowers small, a little more than an inch through; petals white, separated by a brown line; stamens yellow; style yellow, with six divisions, the same length as the stamens.

E. hystrichodes.—Flowers small, about an inch and a half through; petals very narrow, rosy white, with a line down the middle of a colour between violet and amaranth; stamens very numerous, sulphur yellow; style with six divisions of the same colour, longer than the stamens.

E. ensiferus.—Flowers about an inch and a half in diameter; petals numerous, much lacinated at the margins, of the most beautiful violet colour at the middle, but the colour becomes lighter at the margin.

E. nobilis.—Flowers magnificent, about an inch and a half in diameter, and similar to those of *E. gibbosus*.

E. ferox.—Flowers pure white, superb, three inches and a half in diameter, like the preceding, similar to those of *E. gibbosus*.

E. Jussieui.—Flowers small, about an inch through; sepals greenish; petals straight, lanceolate, of a dirty-brown yellow at the base, and slightly tinged with dirty purple at the extremity; style in ten divisions, of a dull red colour, much longer than the stamens, which are yellow.

E. cachetianus, *E. setissimus*, and *E. treculianus*.—These three varieties flower in precisely the same manner. On the same plant there are flowers of a buff orange, and others of a citron yellow. M. Schlumberger thinks that if there is any difference of character between these varieties or species it is very slight, and he can discover none at all in plants of from three to four years old.

Mammillaria grandicornis.—Flowers pale rose, like M. Karwin's *Kiana*.

M. bellatula.—Large flowers, of a rose colour.

M. Saluciana.—Flowers small, of a flesh colour, with a rose middle line.

M. Ramatactina.—Small rose-red flowers, very abundant.

M. albiseta.—Flowers like those of *M. spinosissima*.

M. Bocasiana.—Flowers clear yellow.

M. Cunodstiana.—Flowers like those of *M. Chillifera*.

M. Decholaria.—Very small and bright flowers.

M. Linkeana.—Flowers bright carmine.

M. Klenneirii.—Flowers bright rose.—P. F. KEIR.

GOURDS AND THEIR USES.

WE have this year grown several kinds of Gourds in the open air with success as to the size as well as the number of the fruit; but I wish now particularly to speak of the kind called the *American Butler Squash*, the different preparations of which have been so much approved in my own family, that I am induced to ask your aid in making known its value as a food, and, therefore, recommend the following receipts.

As all your readers may not have "Soyer's Shilling Cookery," I transcribe the following receipts with slight alteration:—

GOURD SOUP.—Take two pounds of Gourd peeled and cut into dice about an inch square, put it into your pan, with three ounces of salt butter or fat, two teaspoonsful of salt, the same of sugar, and a little pepper, and half a pint of water; stew gently until it is quite soft. When in a pulp, stir well in two tablespoonsful of flour; then add three pints of new milk, or two pints of milk and one of cream, or three pints of stock, but do not mix the stock and milk. Boil for ten minutes, and serve with fried toast cut in small squares.

GOURD AS A VEGETABLE.—Line a pan with thin slices of fat bacon, and put into it one or two pounds (according to the size of the dish required) of the Gourd peeled and cut in pieces, a little butter, pepper, and salt; stew till tender; then add a little milk or cream. Put into a mould, and turn out.

GOURD PUDDING.—Two pounds of Gourd, three ounces of fresh butter, one teaspoonful of salt, three tablespoonsful of sugar; stew till it can be reduced to a pulp; then flavour with lemon-peel or almonds. Serve up in a flattish dish which has been lined with a light paste. About twenty minutes will bake it a nice brown colour. It is very good to be eaten cold.

GOURD ENTREMET.—Cut slices of the peeled Gourd, put upon each a little pepper, salt, and a few drops of essence of anchovy; fry on both sides to a nice brown, and serve up hot.—M. P.

THE WOOD-LOUSE.

THE wood-louse, sow-bug, slater, cheese-bug, pea-bug, or by whatever name it goes under in the various counties, is to a gardener one of the most troublesome, as, also, one of the most destructive of insects to fruits and vegetables; it matters not what sort—nothing comes amiss to these vermin. The strongest poisons have no effect upon them. I have tried every trap and every poison, as well as toads and bantams, till, by mere chance, two years ago, I wondered if hot water would settle them. I tried it; it killed them instantaneously: worms, slugs, wire-worms, all insect life is destroyed by boiling water the moment it touches them. This discovery happened in early spring, just before the Cucumber roots had grown to the back and front of the pits. The copper was immediately heated, the boiling water was poured down in the crevices and cracks between the mould and the brickwork, where the wood-lice sleep all day; for it is in the night they feed. My plan is now simply this:—As soon as I fill in my twelve lights in the spring, the mould and all round the brickwork is well saturated with boiling water. After the plants are planted out, then I use boiling water, perhaps two or three times more, round the cracks or crevices, or between the mould and the brickwork, where these bugs are sure to be in the day-time. The time of doing it is two or three hours after the mats have been taken off. When I told a learned Doctor of this, somewhere in Regent Street, he only laughed, and, in reply, asked me *how I could throw salt on a sparrow's tail?*

The way I kill these insects in the Mushroom-house is exactly the same. Should the Mushroom-bed be covered over with hay or straw, let the bed be uncovered for an hour or two before using the boiling water; the insects are then to be found between the mould and the walls, never in the centre; the water is carefully poured round; there are few that escape even with the first dose. Mind, the water must be *boiling*. Had I discovered this plan fifteen years ago it would have been worth many a pound to me, as the Cucumbers and Mushrooms were fetching large prices. The boiling water can be used in every place and in every glass house, and for poor people, where they would not care much for ceilings, boiling water kills a house-bug and its eggs in a moment.

You will see, in my pamphlet on the Vine Disease, that I have also recommended boiling water to be used upon old walls during the winter; also, for the destruction of moss upon orchard-trees, &c.

In conclusion, I beg to say that, although I have been living, like most of us, in hot water all my life, I am surprised that I did not discover long since the idea of putting insects into hot water as well as myself. Two years' practice has thoroughly proved to me that I can kill the wood-lice amongst one hundred lights of Cucumbers and other places at pleasure.—JAMES CUTHILL, *Camberwell*.

QUERIES AND ANSWERS.

TACSONIA MOLLISSIMA NOT BLOOMING.

"I have a *Tacsonia mollissima* in my greenhouse which has not bloomed, though it looks very healthy, and has grown very rapidly. Would it do better if I were to put the roots into a Vine-border, and bring it into the house through a hole in the wall?—A CONSTANT READER."

[Get the *Tacsonia* to the highest point of the roof of the house; prune back to a few buds in winter; and, when the main stem is two or four years old, the young shoots that come from the buds will be fruitful in flowers, though they may grow three or four feet or more before the flower-buds appear. Do not try the scheme you propose with the roots. If you take them up at all, place them in a large pot, for curbing, instead of promoting, luxuriance.]

A VINERY IN TROUBLE.

"We have a Vinery with an inside border 10 feet, and outside border 8 feet wide. What should be done to the outside border from this time through the winter? The Vines in the early house will be taken out of it as soon as the leaves are off, and taken in again and commenced forcing

about the beginning of January. I should like to get a small book on the culture of Vines generally. What would you recommend? We have insects in the Vinery; I believe it is scale. What is the best thing to get rid of the pest? and what would be likely to have brought it there? The houses have been built nearly three years. Three Camellias were brought there that the scale was on. Would it be likely to have been from them?—A CONSTANT READER."

[The best works on the Vine that would suit you were mentioned the other week—take the last one named. If the roots of your Vines are in the outer border, the drier you can keep it the better, by means of tarred canvass-cloth, wooden shutters, thatching, concreting it, &c.; and by the 1st of December put litter on it by degrees, so as to increase the heat in your border to 60° before you have much fire inside. There can be no question that the Camellias brought the scale with them. You would have acted better if you had burned them. You will have to wash the Vines repeatedly with strong soap-water, containing in it a little tobacco, and then paint them well with a paint of sulphur, clay, and a little tobacco-water. You must thoroughly wash every part of the house with soap-water as hot as may be, and scrape off and remove two or three inches of the surface-soil. You could not have a worse plague.]

WINTERING ORANGE-TREES.—MOVING A LARGE ARAUCARIA IMBRICATA & PINUS EXCELSA.

"Will you kindly, in an early number of THE COTTAGE GARDENER, give me an opinion on the two following subjects:—

"Is there any way of keeping Orange-trees in tubs through the winter *not* in a heated house? Is there any sort of structure which, *not heated*, would be able, with the aid of matting or *frigi domo*, during severe frosts, or by covering the tubs to some inches above the soil with tan or straw, to keep them; or would they be safe in a good stable or coach-house? I am afraid the absence of light in the latter would be fatal. The stable has sash-windows. Hitherto the trees have been in a greenhouse *heated*; but they take up so much room that, if they could be stowed elsewhere, it would be very desirable. Would a sunk pit, with lights not higher than the usual garden-frames, covered in front with mats, &c., be sufficient? The trees vary from six to ten feet high, and are in slate tubs.

"Would there be any danger in moving, at the present time, a *Pinus excelsa* sixteen feet high, and an *Araucaria imbricata* fourteen feet high? and what aspect and soil, moist or dry, are most suitable for them?—H. M., *Herts.*"

[A pit sunk in the ground is the more dangerous way of any, and for any plants. Twist a thick hay-band round the stems of the Orange-trees, and up as far among the branches as is bare of leaves. If you use tan, it ought to be dry tan; perfectly dry tan is capital against frost in-doors or under cover; but damp tan is the reverse. Our own Orange-trees have no better accommodation than your stable would afford, except that there is a common fire-place at one end. Hay or straw is a good covering for the boxes. A hay dummy—a kind of truss—should be put against the bottom of the door outside, and a horse-cloth, or some covering, to the window during hard frost. The *Araucaria imbricata* and *Pinus excelsa* will do in any aspect; but, of course, the warmest aspect is the best for all foreign trees. The most sheltered situation is the best for young English Oaks, and for the young of all trees. A dry situation is best for these Conifers, and it is quite safe to transplant them of that size; but none except good, practical hands should try the experiment.]

PELARGONIUM PELTATUM VARIEGATUM.—OPHIOGLOSSUM LUSITANICUM.

"To-day I have met with a plant of *Pelargonium peltatum variegatum*—at least, I presume it is so; for its leaves are as truly peltate as those of the *Cotyledon umbilicus*, which abounds here (Guernsey); but, to make sure, I inclose a leaf for you to examine, and I shall be very happy if it proves to be the one you refer to in THE COTTAGE GARDENER for the 22nd of last April; for then I shall do myself the pleasure of sending you a cutting, for I obtained three.

Could I derive any pecuniary advantage from getting up a small stock of this variegated *Pelargonium*?

"When I was a boy I used to admire *Pelargonium cordatum*, but have long since lost sight of it. I have inquired after it at Kew and at other places, where they seemed to know nothing about it. I daresay you know it. I have often thought it would be much admired now for its prettily cordate leaves, and narrow, whitish, lower petals.

"We have *Pelargonium triste* growing in the open ground here, and it has stood for several years. I have just collected some seeds of it, and think of keeping them till spring; but pray advise me.

"I have just seen a neighbour cultivating the little *OphioGLOSSUM Lusitanicum* with the least trouble, under glass, in a common greenhouse. I inclose a specimen to show how well he has grown it, for there is a prejudice against it, which prevents any demand for it, or I should be glad to advertise it, for the reasons already given; and I found it.—SUFFOLK."

[Your plant is the true *Peltatum variegatum*. We know it to be in the hands of two nurserymen, and two more private growers; but it would not be a bad speculation to get up a quantity of it for the trade. The others are the old crimson and pink *Zonale marginatum*; or the crimson may be the old dark red which made the shot-silk bed; or it may be the dwarf variety called *Grenville*,—the flowers only can decide. We fear the rare little *OphioGLOSSUM Lusitanicum* is too small for the present fashion to be of much value as a trade plant, but you might try. The seeds of *Pelargonium triste* should be sown as early in the spring as you can command heat enough. Strictly speaking, all the tuberous-rooted kinds should be sown in September and October; but the difficulty of carrying them over our winter is so great, that it is safest not to sow them till the worst of the winter is over. *Pelargonium cordatum* is probably lost; we have not seen it or heard of it for many years. It was one of Linnaeus's *Geranium papilionaceæ*.]

STRAW HIVES v. WOODEN HIVES.

"Would you be kind enough to inform me whether Bees managed in straw hives or box hives would be most profitable to a *skilled apiarian*, and which kind of boxes you think best for producing the best or whitest honey-comb? Also, if Bees will make comb of barley-sugar, as you know they sometimes require feeding after swarming, should it be bad weather? Also, what price would good wax and honey command in the London market?—A. FERGUSON."

[It is a difficult matter to decide what kind of hives a "skilled apiarian" might prefer. The purse must often be consulted. It is certain that straw hives are much cheaper than many of the more elaborate ones of the experimental and scientific bee-keeper. "A. F." appears to have an eye to profit; and, perhaps, the flat straw hives, as shown in Mr. Payne's and Mr. Taylor's books, would answer his purpose, where deprivation is the object. As to the whiteness of honey, that depends less on the hive than on situation and season. The price also varies much, according to locality; but the best in the comb often is worth 1s. 6d. to 2s. per pound in the London shops. Barley-sugar is sometimes very useful as food; and, no doubt, the bees could use it as the basis of wax; but it is not so well adapted, under the circumstances of a recent swarm, as honey would be, or even some other saccharine artificial mixture.]

TO CORRESPONDENTS.

CHERRY AND CURRANT-TREES (*Scribo*).—The Black Fly, *Aphis cerasi*, usually occurs on wet or undrained soils, and the cure is to drain them. Your Currant-leaves falling at Midsummer shows that the roots of the tree were inactive. If the ground was parched it should have been watered and mulched over the roots.

CELERY RUNNING TO SEED (*An Old Subscriber*).—The seed was sown too early, probably.

FRUIT FOR A NORTH WALL (*T. H. W.*).—Morello Cherries; *Magnum Bonum* Plums; *Uvedale's St. Germain*, *Bezi d'Heri*, and other stewing Pears.

HARDY CLEMATISES FOR EAST WALL (*William I.*).—*Clematis montana* will grow fastest, and is a profuse bloomer. *C. Hendersonii* is the best blue for you in Yorkshire; and *C. flammula*, the old sweet-scented. You might inquire other kinds on these.

FRUIT CULTURE (*Amator florum*).—Most likely Mr. Errington will attend to your wishes. There have been several good articles on the Plum. The branches of your Plum-trees, if strong, should be shortened; if short and stubby, they should be laid in where there is room for them, and next season they will be studded with flower-buds; and in 1858 they will be fruitful. If there is not room they must be cut back to two or three buds. The bearing buds are generally the thickest on the two-year-old wood. If these young shoots are very strong, it shows that the roots had better have a cut.

BACK NUMBERS (*J. Green*).—All back numbers of *THE COTTAGE GARDENER* can now be had, and you, or any one, requiring to complete a set, had better apply speedily, for some of the numbers are nearly all sold, and will not be reprinted. In your case begin from No. 366, dated October 2, 1855; and bind in six-months' volumes, for which you can have cases from our Office through any bookseller. Remove your *Rhubarb* immediately, injuring the roots as little as possible. Mulch the ground above the roots.

WORKS ON BOTANY (*W. B. B.*).—We answered this query at page 49 of our present volume.

NAMES OF PLANTS (*A.*).—Yours is *Nicandra physaloides*. (*A Notice*).—Your two specimens are from one species, *Acacia armata*. (*The Doctor's Boy*).—*Salvia Camertonii*. (*E. A. C.*).—Your fresh-water plant is *Fontinalis antipyretica*.

MOVING DAPHNES, &c. (*George*).—Your plant is the common garden Variegated Alyssum, usually called *Alyssum variegatum*; but you will find all about it in *THE COTTAGE GARDENERS' DICTIONARY*, under the name *GLYCE*. It is almost a hardy plant, if not quite, and is much used as a marginal plant to beds and borders, as a contrast to other plants or flowers of colour. It strikes freely in the hotbed in the spring months from cuttings. The other plant you mean is the *Phlox Drummondii*, of which there are many varieties of colour; not that we call this an annual creeper. The common *Daphne* is such a good-natured plant, that it will flourish in any good garden-soil not too light; and where the natural soil is too light, add to it a portion of loam and leaf-mould. All the *Daphnes* delight in this and a cool situation; but *D. cneorum* and this pretty little gem delight to bask in the sun, and planted principally in peat, with a little loam. This is just the very time to replant either the old plant or the young layer that was laid down last spring.

PLANTING NEAR THE SEA-SHORE (*I. H. B.*).—Stiff clay, over limestone, close to the sea, in the south-west of England. Who can tell us the best wood and underwood trees, and bushes to cover such a place, for our correspondent? Your second question about plants in pots to flower in beds in the spring, and to take up at bedding-time, is simply answered by saying, *practically*, there are no such plants anywhere that we know of; but, theoretically, you can pot a thousand spring bulbs for the purpose; and every kind of Hyacinth, Tulip, Narcissus, and other families of bulbs that are now advertised, are just as good as any of the rest. You might shut your eyes, and choose out of a lot of kinds, and be as wise as any of us. Then there are many alpine plants which flower only in the spring, beginning with *Ranunculus*, a pure white, in March; and no one could tire of a bed of it five miles long at that season. It is followed by *Arabis verna*, of which we, hereabouts, could muster enough for an acre or two. Every house, garden, and cottage-garden is a "shine" with it for six weeks in March and April. After the middle of April the difficulty is to choose between autumn-sown annuals and yellow and variegated *Alyssums*, *Doronicums*, *Veronicas*, *Primulas*, and all the rest of them; but not a pot-plant for a bed, or a really bedding-plant among them all, except the *Doronicum Austriacum* and the two *Alyssums*. *Anemones* will never pay for such purpose; but they and all the above will move quite safe with balls the moment they are out of blossom. "Potting" is not half so good as "chancing" them. Send your plan and planting, and we will criticise it.

BOILERS (*Amateur*).—We do not know what one of Weeks' smallest-sized boilers would be in price: why not write to them? You will see something about their boiler in our paper to-day. A conical boiler of Rogers', to suit you, would, we believe, be between 50s. and 60s. Mr. Thompson's common retort boiler is £4 at Dalkeith. He has informed Mr. Fish that he is getting a smaller boiler constructed on the same retort principle (that is, the fire going all round, and then returning right through its centre), which would heat a couple of Vineries; and which he hopes the manufacturer will be able to send out with fire-bars, plate, furnace-doors, &c., complete for a little more than three guineas. We still want a strong, effective, simple boiler for less money than that, so as to be easily fixed by an amateur for his small greenhouse or preserving-pit, and it will come ere long. We have already said as much about boilers as we can well do in fairness to competing tradesmen, all of whom, we have no doubt, can make their own boilers work well, and each believes his own system to be the best.

HEATING A PINE-PIT (*A Two-years' Subscriber*).—We approve of the whole plan, only we should like the two front pipes to be flow-pipes, and to bring one return from them at or in the passage behind. If from the pathway beneath the bottom of the bed you had several open drains across the house, and a shaft from these opening beneath the front pipes, you would have a better circulation of air in the house. Iron or other troughs should be fastened on the front pipes to give off vapour. With these little matters, and attention, success is certain.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

BIRMINGHAM. December 2nd, 3rd, 4th, and 5th. Sec., J. Morgan, jun., Esq. Entries close November 1st.

CRYSTAL PALACE. January 10th, 12th, 13th, and 14th. Grand Exhibition of Poultry, Pigeons, and Rabbits. Secretary to the Poultry Exhibition, William Houghton, Esq., The Sands, Runfold, near Farnham, Surrey. Entries close December 13th.

ESSEX. At Colchester, December 31st, 1856, and 1st, 2nd, and 3rd of January, 1857. Secs., G. E. Attwood and W. A. Warwick. Entries close December 17th.

GLOUCESTERSHIRE. Nov. 26th and 27th. Sec., E. Trinder, Esq., Cirencester. Entries close Nov. 1st.

NOTTINGHAMSHIRE. At Southwell, December 17th and 18th, 1856. Sec., Richard Hawksley, jun. Entries close November 19th.

NOTTINGHAM CENTRAL POULTRY ASSOCIATION. January 13, 14, and 15. Hon. Sec. Frank Bottom. Secretary to the Canary Department, Jno. Hetherington, jun., Sneinton.

PRESTON AND NORTH LANCASHIRE. January 21st and 22nd, 1857. Sec., Ralph Leigh, Esq., 125, Church Street, Preston. Entries close December 13th.

N.B.—Secretaries will oblige us by sending early copies of their lists.

JUDGES OF POULTRY.

"Ignorance in a Judge renders justice a mere accident."

As all poultry amateurs will unanimously admit, that to have the premiums honestly, faithfully, and efficiently awarded, is vitally important both to the present, as it is, likewise, to the prospective interests of our public Exhibitions, we need not, certainly, offer any apology for at intervals calling the attention of managing committees to this all-important, although evidently ill-considered subject. It certainly appears, from a cursory glance at some of the appointments that from time to time take place, that both the fitness of the individual to fulfil the office, and its satisfactory conclusion, are alike totally disregarded. No previous inquiry is instituted as to the capabilities of the arbitrator, or his inability would be patent to every one; but as a Judge is admittedly a compulsory appendage to a Poultry Show, some one is taken hap-hazard, and "chance-work" gives to every exhibitor—good, bad, or indifferent—the like probabilities of success.

Our statement, of course, is not of universal applicability; for, were it so, the very existence of such Exhibitions would be involved in speedy and equally irrevocable ruin. Still, as the indifference displayed seems to be rather on the increase than otherwise, the following "illustration" placed in the hands of our interested readers will, most probably, prove sufficiently explanatory. It is the effusion of a would-be—and, as will be seen, an *about-to-be*—official, whose duties impose the affixing of the Society's premiums at sight to the best specimens that may be competing. We will simply state it was addressed to one of our most experienced and generally approved poultry Judges, and received from his hands, by the same day's post, a very courteous and fully explanatory reply, detailing the particulars sought for. We print it without any alteration or correction:—

"Sir,—I am about to officiate at a poultry exhibition where the Sebright Bantams is to be shoven, but with all the points of this class I am not not so well acquainted as I could wish to be and being desirous that the cause be not injured by me I have daired to approach and solicit you to answer the following questons

first

suposing the birds to equal in lacing brilliancy coulour and make but the one single and the other rose combed which of the two ought to be declaird the best

second

suposing the birds as above the one having the fan tail and the other having soward feathers fully or partially developed which of the two ought to be declaird the best

third

suposing the birds to be equal in all other points but one of them well laced, but not very pure in coulour the other pure in comb but not so well laced which of the two ought to be declaird the best

fourth

suposing one of the birds having all the points good but large in size, the other small but not so good as the other, which of the two ought to be declaird the best ought the ground coulour of the golden, to be yellow or a deep red brown or brownish yellow coulour

Sir by answering the above questions you will greatly oblige you obedient

Humble servant

"

The above is by no means a solitary exception; frequently has the knowledge of similar incompetency reached our ears. Not very long since, a long-practised arbitrator, at the very moment their united duties were commencing, was paralyzed by the tremulous query from his colleague, "Mr. ———, which are the Grey Dorkings, for I know nothing about them?" concluding the unlooked-for appeal

by the honest admission, "he wished he had never been induced to take the office, for it was *only one* variety of fowls he had ever kept, or studied as to their peculiarities;" whilst the indisputable traits of character in this single species evidently afforded the party alluded to his invariable and constantly-appealed-to "standard" for *all other* classes!

More equally gross cases of incompetency and unsuitableness might with ease be adduced; but the exposure is anything but self-satisfactory to ourselves, and would, probably, if farther enlarged, only engender feelings of distrust towards those individuals who would ill deserve such unmerited condemnation. We have always desired to produce good feelings and the prosperity of our poultry meetings generally, as they not only tend most extensively to the improvement of all varieties of fowls, but they equally add (by yearly *réunions*) to the friendship and satisfaction of their owners, equally with all others who may attend them. If, however, the evil exposed remains unmitigated and in force, can any fixed standard be attained, the confidence of amateurs insured, or even the meetings themselves prove stable?

LANCASHIRE HAMBURGH SHOWS.

I ANNEX you particulars of the local Poultry Show at Mr. James Heywood's, Bow Lee, near Middleton, held November 7th. Single pullets only are shown, all of the *Hamburgh* varieties. The fine pens of *Silver-spangled Hamburghs* were all of them excellent birds, well broken, and the white clear, the moons large and glossy green-black; the other points good. The *Golden-spangled* were good birds, but the ground-colour of all of them is rather darker than what has hitherto been the favourite at Birmingham and other larger Shows; but both will muster in good force, on the 2nd of December, at Birmingham, as far as I can hear.

The *Silver-pencilled* were very fair birds; but there are better in the neighbourhood, which are entered for other Shows, the breeders wishing to reserve them for what they consider the best Show.

The *Golden-pencilled* were beautifully-marked birds; but I fear the size is degenerating throughout the country; and they are a difficult class to breed and keep good, as the plumage alters so very much from time to time; getting lighter.

The *Black Hamburghs* were, without exception, the best birds I ever saw exhibited; and I am only sorry there is not a distinct class for them at the Birmingham meeting; but I have little doubt of their creating one by-and-by, as they are, in my opinion, one of the best classes of fowls bred for useful purposes, laying well, and good-sized eggs; and, when together, *their extremely glossy green-black plumage, large white ear-lobes, and double-red combs*, form one of the best groups in the poultry-yard.—G. D. RUSHTON.

Single pullets only shown.

GOLDEN-SPANGLED.—First, Mr. James Heywood, Bow Lee, near Middleton. Second, Mrs. Jonathan Booth, Hailsworth. Third, Mr. James Parkinson, Simister Lane, near Middleton. Fourth, Mr. James Heywood.

SILVER-SPANGLED.—First, Mr. John Scholes, Bucklow Green, near Hollinwood. Second, Mr. James Lancashire, Tonge Lane, near Middleton. Third, Mr. James Partington, Simister Lane, near Middleton. Fourth, Mr. Jno. Hall, Hollinwood.

SILVER-PENCILLED.—First, Mr. John Grundy, Simister Lane, near Middleton. Second, Mr. James Heywood. Third, Mr. Wm. Partington, Simister Lane, near Middleton.

GOLDEN-PENCILLED.—First, Mr. James Wilde, Hailsworth. Second, Mr. Jos. Scholfield, Butter Green, near Hollinwood. Third, Mr. Wm. Lancashire, Simister Lane.

BLACK HAMBURGS.—First, Mr. Jno. Booth, Hailsworth. Second, Mr. Charles Jahons, Simister Lane. Third, Mr. Joseph Scholfield, Becklow Green, near Hollinwood. Fourth, Mr. Jno. Grundy.

ON THE ORIGIN OF SEBRIGHT BANTAMS.

RESPECTING the origin of these remarkable birds no satisfactory account has ever yet been given to the public; consequently, numerous and contradictory statements are current. Sometimes they have been termed the "*Sebright Jungle Fowl*," as though they were the direct and unmixed descendants of a breed from the Indian jungles; but the wild original is unknown to naturalists. Others, again, have attributed their origin to careful crosses between the old Nankin-coloured Bantam, and some of our so-called *Hamburghs* or *Pheasant* fowls; whilst a third have referred them to a cross between the Bantam and the Laced Polish.

The last supposition seems, at first sight, to be the most monstrous, from the assumed difficulty of getting rid of the crest and nostril of the Polish fowl; but, in reality, this is not an objection. I have, for some time, been devoting much attention to the different Polish varieties and their crosses, and can state from experience that, by *careful selection*, the Polish crest may be entirely bred out in the second generation, that is to say, that fowls may be one quarter Polish, and yet no trace of crest visible. I do not say that this will be the case in all the breed; but it will be in many; and the converse also holds good, that many birds reared from a half-bred Polish and a pure Polish may show no perceptible falling off in the size of crest from that of fowls whose pedigree is unmixed.

For example, last season I reared some cross-bred fowls between White Cochins and a White Polish Cock; they were white, slightly crested, bearded, with blue legs, slightly feathered; one I kept as a sitter, and she was running this year with a very large-crested Polish cock. I hatched a few of her eggs, and have now before me a White Polish cockerel thus produced with *very full crest*, the only trace of his illegitimacy being that his blue legs are slightly feathered.

I mention these cases to prove that the Polish crest is not an inseparable objection to the Polish Sebright theory; but, fortunately, I have something more than mere theory to advance. The following account was, by the kindness of Dr. Horner, obtained from the present Sir Thomas Sebright, for the purpose of publication in the new edition of "*THE POULTRY BOOK*;" but it appears to me so exceedingly interesting as to deserve the greatest circulation that can be given to it; and, therefore, I have no hesitation in forwarding it for publication in *THE COTTAGE GARDENER*.

Dr. Horner states, "The following information was courteously given me by the present Sir Thomas Sebright himself. It was about the year 1800 that the late Sir John Sebright just began to fashion the Sebright Bantam. The cross was between some common Bantam and the *Polish* fowl. These were bred in and in until the required marking and size were secured. Sir John then accidentally found a short-tailed Bantam cock in the country where he was travelling. This short-tailed bird he in-bred with his newly-manufactured Bantams, thereby giving their progeny the present form of the short tail.

"Sir Thomas is quite satisfied that it was the Polish, and not the Golden Pheasant (so absurdly nicknamed now Spangled Hamburgh), with which the Bantam was first crossed. I thought, in my inexperience, that the top-knot, beard, &c., of the Polish could hardly have been got rid of; but the last two seasons alone have been sufficient to show me how easy it is to get rid of these appendages. Thus, last year, I had a young cock bird with a beard, and also with a crest of feathers behind a somewhat irregular rose comb. This bird was bred from a Golden Polish cock, and one of Sir Thomas Sebright's Golden Sebright Bantams.

"This year I crossed this young cock with a Golden Pheasant hen, and obtained three chickens, all cocks. One of these is quite free from both beard and crest, and with a fine rose comb and good wattles; the other two have no crests, but have some beard, fine rose comb, and small wattles."

This account, I think, may be regarded as putting the question at rest, for I do not see that we can have any higher authority on the subject; and I must say that I feel a considerable amount of pleasure in having been the channel through which this interesting fact has been made known.—W. B. TEGETMEIER, *Tottenham*.

EGGS IN WINTER.

*Experientia docet.**

"CONFUND the fowls! I have not had an egg these two months. Hang me if I do not twist the neck of every mother's son; ay, and daughter too; they are a perfect nuisance. What is the use of keeping these wretches? They eat and eat, and not as much as an egg from any single one." Such were the anathemas from a testy bachelor neighbour of mine *last year*. "Well, well," I replied, "tell Betty not to buy any more meat for a week, for you must

* Translation. Experience does it.—Printer's Devil.

live on fowls for the next ten days; and I will keep you on eggs for the same period after that, as you have made up your mind to abide by my counsel." "Upon my life you will be a conjurer if you can do that from my own yard."

I will not enter into particulars respecting the breed of birds in his keeping. Suffice it to say, two pens of his favourite sort were reserved, and, in the room of some fifteen or sixteen scrubs, three Partridge Cochins were picked up in the street at 2s. 6d. each, being about five months old. They commenced laying immediately, and I could almost have fulfilled my promise as stated above; but he so stoutly refused to have a fourth Cochin, which he termed a nasty *galliganting* brute, that the intentioned feat was frustrated. On the first warm, sunny day in March two got broody, and, having saved a few eggs from his pet kinds according to my advice, he set them both on seven eggs each; they hatched out all fourteen. These he allowed one hen to take, and the other, after a few days, laid again, being, as is usual, broody a few weeks after for the second time, and was kept sitting on an egg for three weeks, waiting for the third Cochin to become broody, which, after that period, she did, and they both were set on eleven eggs each, and they hatched very well. I forget the number; all the chickens were placed under No. 2. The other remaining hen, after a very few days, laid one egg, and then stopped; but, wishing to have no lazy hours, actually took the part of the first clutch of chickens, who were too severely chastised by the mother, and coaxed them away, leaving the former nurse not at all disconsolate, for she laid again; but, getting broody very early after, her head was chopped off; and, as soon as all the chickens were fit to care for themselves, the other two Cochins were given away, being of no use. With the warm weather they were supplanted by my neighbour's summer birds. This I find to be the way to look at the economy of fowl-keeping. You cannot well do without the Cochins for winter. I have never liked their lines of beauty and gracefulness; but I am not blind to their usefulness as winter layers. My friend cannot get over his dislike to these birds; but he finds they are the only birds to lay all the winter; and, by their willingness to sit almost at any time in the summer, he can get pullets laying late in the fall, besides the chance of having lots of early broods. This, then, is my experience, and if any one of your readers can bring to bear a better one, "come, let us hear it."—W. H., *Exeter*.

DEFALCATIONS IN PAYING THE ANERLEY POULTRY SHOW PRIZES.

PERHAPS, if all the individuals who severally claim the one unpaid prize referred to by the Secretary to the Anerley Show would send you their names, it would at least be the means of enlightening the public. I can answer for it that I have not received my prize money, and I trust I am the only one.—C. E. COLERIDGE.

[If any one will furnish us with the names and full directions of the members of the Anerley Committee, we will publish them, for the information of all exhibitors of poultry.—ED. C. G.]

CRYSTAL PALACE POULTRY SHOW.

WE were very much pleased to see the announcement of this Exhibition; for the Crystal Palace is the only place in all England that seems faultless for such a purpose. Every pen can have an equal exposure to the light; the birds, as well as the spectators, will be in a well-ventilated yet sheltered arena, and this so vast in size, that the crowing and other annoyances will be almost unobserved. The liberality of the prizes will secure abundance of exhibitors. We think it right to state that it has no connection with those who have so shamelessly failed in fulfilling their promises in the neighbouring grounds at Anerley, and we hope it will be the first of a series of Metropolitan Poultry Shows equalling in excellence that at Birmingham.

We regret that it is fixed for days clashing with the Nottinghamshire Central and Essex Shows. If its days cannot be altered, the Committees of the two Exhibitions we have named will do well to consider if they had not better change their days of exhibition. (Essex has altered its days. See our LIST OF SHOWS.)

PLATE PRIZES AT POULTRY SHOWS.

ALLOW me to thank Mr. HEWITT, through your columns, for his judicious letter on the subject of Prize Cups at Poultry Shows. My wife is weary of Prize Cups, and begs for some variety in the prizes. A few Silver Salvers would be an acceptable addition to my sideboard. Could not the silversmiths of Birmingham be invited to send new or old pieces of plate, of the requisite value, to be exhibited in separate cases, and from which the successful competitors might select their prizes? In Liverpool the prizes are in every respect worthy of the indefatigable committee who minister to the fancies of the poultry amateur; but, whilst we award all praise to the Birmingham Poultry Committee, we smile incredulously at the Silver Cups, and think that they fall very short of £10 10s. in value.—GALLUS.

OUR LETTER BOX.

MARKINGS OF GREY DORKINGS.—"Will you be so kind as to give the proper markings of the Grey Dorkings, hen and cock?—A CONSTANT READER."

[There are, properly speaking, no special markings for a Grey Dorking hen. She may be light slate colour all over, or grey body, silver hackle, and salmon breast, or grey with ash spots, or a delicately-pencilled French white. All are correct; but the birds in the pen must be alike in every particular. The cock to match such should have light hackle and saddle, dark breast and tail; but a spangled breast and a party-coloured tail are not in any way objectionable.]

SPANISH CHICKENS, WHICH TO KEEP.—"I have a lot of Spanish chickens hatched in April from eggs obtained from two of the most celebrated breeders in the country; but, unfortunately, I am unable to tell which of the birds I ought to keep. By far the finest bird I have in every respect except face is in this condition—he has a white face all but the part over the eye; there it is red, with the exception of a small portion between the red and the comb that is white. But there is one peculiarity about this bird I do not see in any of the others. The red over his eye is constantly changing in colour; sometimes it is very red, and then in a few minutes it will become so pale as to be hardly perceptible. Is that a good sign? I have several cockerels white all round the eye, with the exception of a few splashes of red between the eye and the comb; but they are not such fine birds in other respects as the before-mentioned. I have also one that has never been red at all, but white all round; but then he is the smallest of the lot, and now only weighs 5lbs., although he is six months and a half old. I have the *Poultry Book* and others, but I do not find in any one of them what a beginner most wants, and that is a description of the state the birds should be in at the age when one ought to select what to keep and which to discard. What I most wish to know is, how old a young cock may be before I give up all hope of his ever becoming perfectly white?—A YOUNG HAND."

[We have much pleasure in answering your questions so far as we can; but many who have passed a lifetime among Spanish fowls are in the same difficulty as yourself. We always draft our Spanish chickens at six months; we are bound in candour to add that we are often mistaken. By all means keep the young cock that has never had any red in his face. These precocious birds are always small; but as he weighs now 5lbs., he may yet add 1½ lbs., and 6½ lbs. is large enough for anything. The proper time to judge Spanish chickens is when they are quietly feeding. There is then no excitement; but when they are snatched from a perch, or run down in a yard, their exertions make them "red in the face." Many a bird has made but a few shillings, being condemned in this way, and her price has proved afterwards "a shilling in the pound." But a selection becomes necessary, because, as they grow up, they eat too much food, and occupy too much space. Among your cocks choose those that show the greatest mixture of white with the red over the eye. Prefer a number of white spots all over the red to a white streak between two red ones over the eye. We risk tautology, because there is no hope of a bird that is not entirely white below the eye at six months old. Choose your pullets with long, skinny, workhouse faces; take those that are of a dirty white all over, and reject those that have an angry red mark between the eye and the comb. Follow these rules; you will not always be right, but you will not often be wrong.]

LONDON MARKETS.—NOVEMBER 17TH.

COVENT GARDEN.

THE present fine weather has enabled the growers generally to get better supplies to market, and, as the importations of foreign fruit have not been so abundant the last few days, a trifling advance in first-rate articles has been supported. *Pears* consist of *Glout Morceau*, *Nelis d'Hiver*, *Crassane*, *Chaumontelle*, and some *Marie Louise* may still be met with. The *Potato* markets are fairly supplied; but good, sound descriptions meet with a ready sale both here and at the water-side.


POULTRY.

There has been an ample supply during the past week. The improvement in price is very trifling; but the brisk, cold weather has given cheerfulness to the market.

Large Fowls 4s. 6d. to 5s. 0d. each.	Hares 2s. 6d. to 2s. 9d. each.
Smaller do 3s. 6d. to 4s. 0d. "	Ducks 2s. 6d. to 3s. 0d. "
Chickens .. 2s. 0d. to 2s. 6d. "	Geese 6s. 6d. to 7s. 0d. "
Grouse 2s. 0d. to 2s. 3d. "	Rabbits 1s. 4d. to 1s. 5d. "
Partridges.. 2s. 0d. to 2s. 3d. "	Wild ditto 9d. to 10d. "
Pheasants.. 3s. 0d. to 3s. 3d. "	Snipes 1s. 3d. to 1s. 6d. "
	Pigeons..... 8d. to 9d.

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WEEKLY CALENDAR.

D M	D W	NOV. 25—DEC. 1, 1856.	WEATHER NEAR LONDON IN 1855.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
25	Tu	Redwing arrives.	30.277—30.043	43—18	N.E.	00	38 a. 7	57 a. 3	5 19	28	12 42	330
26	W	Grey Wagtail arrives.	30.239—30.241	42—36	N.E.	00	39	56	6 33	29	12 23	331
27	Th	The drab day Moth.	30.035—29.983	47—42	N.E.	01	41	55	sets.		12 3	332
28	F	The common flat body Moth,	30.112—30.019	47—36	N.E.	01	42	55	3 a 49	1	11 42	333
29	S	Song Thrush sings again.	30.111—30.045	45—33	N.	00	44	54	4 34	2	11 21	334
30	SUN	ADVENT SUNDAY. ST. ANDREW.	30.078—29.980	45—26	W.	00	45	53	5 37	3	10 59	335
1	M	Carabus morbillosus.	30.073—29.887	46—33	N.W.	03	VII	III	6 a 52	4	10 36	336

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 47.5°, and 32.1°, respectively. The greatest heat, 60°, occurred on the 28th, in 1848; and the lowest cold, 16°, on the 29th, in 1846. During the period 95 days were fine, and on 101 rain fell.

OSMUNDA REGA'LIS.



THIS very stately Fern has never been called by modern botanists otherwise than by the above names; and its usual English names bear the same import, for it has been called *The Royal Fern*, *Osmund Royal*, *Royal Moonwort*, and *Royal Brachens*. Early writers, however, have called it by names less dignified, for we find it mentioned as *Flowering Fern*, *Osmund the Waterman*, *Water Fern*, and *Saint Christopher's Herb*.

Its root is tuberous, woody, scaly, sometimes extending horizontally, but at others rising erect as much even as two feet out of the ground, and at all times furnished with numerous, strong, fibrous rootlets. The fronds rise from the crown of the root. The fertile fronds are usually two or three feet high, and few in number; but the barren fronds are more numerous, and often attain to more than six feet; and Mr. S. Murray, on the banks of the Clyde, measured one tuft

that was eleven feet and a half in height. Their stem is smooth, and reddish when young; they are doubly leafleted, the primary divisions being opposite, and the secondary divisions mostly alternate. Leaflets smooth, bright green, nearly stalkless, somewhat heart-shaped, or slightly lobed at the base oblong, bluntish, entirely or only slightly scalloped, but we have seen them slightly toothed; they have one mid-vein, and numerous lateral veins. In the fertile fronds the upper leaflets are divided and changed, as it were, into dense clusters or spikes of capsules. The terminal divisions of the frond are composed entirely of such capsules, forming a compound, loose cluster or panicle. Each capsule is at first green, but becomes pale reddish-brown, veined, two-valved, and on a short stalk; the seeds (spores) are numerous, and nearly globular.

It is not very common, and is found in wet bogs, woods, and hedges.

In *England* it has been found at Low-gelt Bridge, Allowby, and Keswick, in Cumberland; between Stonebridge and Bradnock's Marsh, near Parker's Mill, in Warwickshire; at Ellesmere Lakes, Moreton Moors, and West Felton, in Shropshire; at Speke, between Crosby and Formby, and on Chat Moss, near Liverpool; Walston Moss, near Warrington, in Lancashire; in the Isle of Man; Chartley Moss, in Staffordshire; at Pottery Car, near Doncaster; near Leeds; near the upper mill at Bulwell, in Nottinghamshire; on bogs near Yarmouth, and St. Faith's, Newton Bogs, Norwich; in Kavanagh's Wood, Great Warley, near the Barracks at Little Warley, and at Danbury, in Essex; near Leith Hill, and near Dorking, in Surrey; on Bagshot Heath; between Frimley village and Frimley Green, and on Esher Common, in Surrey; at Tunbridge, in Kent; at the corner of the Lake, Uckfield, in Sussex; on the cliffs near Dawlish, near Chudleigh, on the banks of the Teign, and at Ivy Bridge, on the Erme, in Devon; on the Goodhillly Downs, near St. Ives, and in the mouths of old mines near Marazion and Cosgarne, Cornwall; in the Isle of Wight; at Sandford Bridge, near Wareham, and at New Bridge, near Wimborne, in Dorset; in the New Forest, and at Freemantle, near Southampton.

In *Scotland*, at the head of Loch Fine, to the north-east of Inverary, Argyleshire, and on the Dumbarton side, near Loch Lomond; at the side of the Loch at Inclinedamff, Sutherlandshire; in Aberdeenshire, and on the coast of Kincardineshire.

In *Ireland*, at Mucruss Abbey; at Castlebar, in Mayo, and in Kelly's Glen, county of Dublin.

In *Wales*, near Llyn Traffwl, in the turbary at Trewilmot, near Holyhead.

The first notice of this "flower-crowned Prince of British Ferns" is in the edition of *Gerarde's Herbal* of 1597. He says, "It groweth in the midst of a bog, at the further end of Hampstead Heath, from London, at the bottome of a hill adjoyning to a small cottage, and in divers other places; as also upon divers bogges on a heath or common neere unto Bruntwood, in Essex, especially neere unto a place there that some have digged, to the end to find a nest or mine of gold; but the birds were over fledge, and flowne away, before their wings could be clipped."

The root of this Fern was considered by ancient physicians, "especially the heart, or middle part thereof," as a powerful remedy if applied to wounds. That "middle part," says Gerarde, "hathe beene called the heart of Osmund the Waterman."

Dodoens, in 1583, was the first to call this Fern by the name of Osmund; and, as Dodoens was a Fleming, we might expect from Flanders to ascertain the origin of this name; but it remains unexplained. Parkinson says it was called "*Osmunda regalis*, of the singular properties therein;" but whether he refers to the first or second word of the name is not specified. *Osmund*, in Anglo-Saxon, is "House-peace;" at least, so says Camden; and "House-peace royal" may have reference to its then credited powers as a vulnary.

Wordsworth, with a poet's license, but no authority, thus speaks of this Fern:—

"Fair Ferns and flowers, and chiefly that tall Fern,
So stately, of the *Queen Osmunda* named;
Plant lovelier, in its own retired abode,
On Grasmere's beach, than Naiad by the side
Of Grecian brook, or Lady of the Mere,
Sole-sitting by the shores of old romance."

Another poet anonymously refers to the same plant as follows:—

"Auld Botany Ben was wont to jog
Thro' rotten slough and quagmire bog,
Or brimfull dykes and marshes dank
Where Jack-a-Lanterns play and prank,
To seek a cryptogameous store
Of Moss, of Carex, and Fungus hoare,
Of Ferns and Brakes, and such-like sights,
As tempt out scientific wights
On winter's day; but most his joy
Was finding what 's called *Osman Roy*."

This most noble of all the British Ferns, being so distinct from all others, and being so easily cultivated, should not be absent from any collection. Mr. W. Reeve says that it will be found to delight in a compost of three-parts fibry peat and one of vegetable mould, with a free admixture of silver sand. If grown in a pot, which must be large, or other confined space, it must have good drainage, and an abundant and continuous supply of water. With a moderate space for its roots it makes a noble-looking plant. For open-air culture it prefers a damp, shady situation, and in the compost as for pot-culture it will thrive and do well. It may be also grown in exposed situations with an abundant supply of water through the summer months. In such an exposure it will not produce nearly such fine fronds

as in one more shaded; yet, if a constant supply of water and good drainage can be secured, it will do remarkably well. We have also grown this *Osmunda* very successfully in a stove temperature, where it will, with plenty of light, form also a pleasing object. It is too large for a Wardian case. It may be increased by sowing its seeds, and also by division; but by its seeds is the best mode.

PRUNING CURRANT-TREES.

I now proceed with what is termed "Bush-fruit," and will take the Currants as a group, which, as the world knows, includes the Red, and White, and Black. The treatment of the Black kinds is almost diametrically opposite to that of the Red and White; but still I will treat of them as a group. The latter class produce most of their fruit on what are called spurs—those little short-jointed bunches, or constellations of buds, with which the main branches of fruitful Currant-bushes are sure to be studded. Sometimes, however, the young or annual growth produces blossom-spurs; but this is generally when the trees get old, or when they are weakly, and is more frequent with the White than the Red varieties, which, in general, grow more luxuriantly than the White. The production of blossom-buds on the young shoots, however, forms not the prime object of the judicious pruner.

Currants, like Gooseberries, are generally propagated by cuttings. These are selected from the very strongest and straightest shoots of the last growth, and are, for ordinary purposes, from twelve to fourteen inches in length, about four or five inches being thrust in the soil. For special cases the shoots must, of course, be longer accordingly. From the cuttings spring a few shoots, which, being pruned back at the rest period, produce sufficient to form a regular bush in the ensuing season. About five or six are selected at the next pruning period, and these are chosen in such a way as to form a kind of ring, leaving the middle tolerably open, for there should not be a centre branch if it can be avoided; the middle of the bush being kept studiously open for about a foot at each pruning period, affords what may be termed breathing space for the surrounding branches. A good bush is generally composed of about eight or nine branches. These are amply sufficient; indeed, if well furnished with fruit, as much as the branches can afford to bear.

Now, the centres of the bushes become annually filled up with young spray, which it is the pruner's business to reduce; and this is the first stage in the process of pruning. Those who cultivate Red and White Currants as they ought to do take care to summer-prune in July the watery breast-shoots, which are abundantly produced in the sides of the branches, emanating chiefly from the clusters of spurs, to which there is little doubt they are of much service within certain limits, as sustaining their vitality; or, in other words, of serving not only to attract the ascending sap, but also to contribute, by the elaborative process, towards the maturation of the fruit. However, these must be shortened, and I must here say how. On a close examination of them it will be seen that most have a spur, or a rising group of buds of fruitful character, at their base, and that about three quarters of an inch of that portion of the wood is very different in character from the upper portion, the latter having simply wood-buds, the former blossom-buds, or, at least, designed by nature to become so. These, by different pruners, are kept of different lengths; some cutting them within half an inch of their base, in order to prevent them "running to wood;" others leaving them

nearly two inches. I have proved the medium course to be satisfactory, and that about one inch is best. Let us now suppose that we have been thus operating on a bush, and that it is a good-sized one, having at least its full complement of main branches—that the spurring back is complete. We must now talk about the shortening process, and, in so doing, must resort to the bush in its young or nursing condition. I spoke before of the general maxims as to the placing, by the pruner's art, of the leading branches, which must ultimately form the fabric of the bush. I did not, however, refer to the shortening process, which, by most persons, is considered requisite, and for the following reasons. Currants left without shortening, if growing freely, would be almost barren of spurs for one half their height. A bush may, and frequently does, produce shoots of two feet in length in one summer; but under the most favourable circumstances we may not expect a greater length than nine inches to be clothed properly with spurs. "*Mulum in parvo*" must be our motto here as in many other affairs; in other words, we must aim at many clusters of spurs in a small compass; and, by thus pruning back annually to a reasonable length of young wood, the bush will become clothed with spurs. These things well understood, in reference to the shortening, I may observe, that the degree to which shoots ought to be shortened must ever depend much on the power of developing side-spurs. Taking the average, I would recommend from six to ten inches. This much may surely suffice for the Red and White Currants. Much more might, of course, be said; but I am necessitated to move towards other objects, especially as bush-pruning may commence at any time.

BLACK CURRANTS.—These bear on the young wood chiefly; at least, the inducing them to do so is the chief consideration. Thus, as before observed, they are much opposed in habit to the Red and White. Red Currants may be too luxuriant; Black can scarcely be so, and their character for profit depends much on the freedom with which they produce young wood. Their pruning, therefore, becomes very simple. They are seldom shortened by our best cultivators, as their wood is generally mature betimes to the very extremities; they, moreover, bear some of the very finest fruit towards the points of the shoots. Sometimes, however, there are special reasons for having recourse to a severe shortening, such as in the case of old and exhausted bushes, those which have lost some of their main branches through premature decay, or such as have been badly managed in their earlier stages. In such a position, whole branches sometimes have to be removed, or partially so; and this with a view to induce a liberal amount of young spray to come forth, tending, of course, to the renewal of the bush, and to keep it well furnished.

In thinning out the young spray of the Black Currant it is not necessary, as with the Red, to keep the centre particularly open, although it should not be quite so full of wood as the exterior, remembering that the finest fruit is ever produced from the latter, in consequence of the free access of light and air. As a maxim I should say, that for young spray an average of five or six inches apart will produce a heavier and finer crop than it would if left thicker; and there is yet another consideration—the vigour of the bushes will be less impaired, and they will be less liable to blights than when in a cramped condition. But the flavour, also, is a consideration; and who, as regards any fruit, expects the same amount of flavour from an over-cropped tree or bush as from one receiving fair treatment?

And now a word or two about insects, blights, &c. The Black Currant is very liable to the attacks of aphides, and many a crop is lost or spoiled through their depredations.

In summer-time it is difficult to cope with them,

tobacco-water being the only certain remedy, and this is too expensive for people in general, seeing, at the same time, there are so many claimants for it in the fruit-garden. There can be little doubt that insects, their eggs, &c., for the most part lurk about the very bush or tree that reared them; that those left alive spend their winters in that spot, and migrate little. Such, if any-ways correct, is at once suggestive of preventive measures in the course of the winter. Now, it would seem that any application to the stems of bushes or trees should either be compounded on the principle of proving at once destructive to insects, or else of blocking them up in their little fortresses, and so starving them to death by precluding the air, &c. At present I fear there is no power sufficiently tested of an instantly destroying character, proved, at the same time, to be innoxious to vegetable life. We have, however, compositions which will block them up in their dens; and this is the course I would, at the present moment, recommend. I have used soft-soap and clay-water hitherto, and, in the case of Plums, have found it of great importance; but, as this is liable to wash off too speedily, my friend Mr. Hill, of Keele Hall, who has used it, informs me that he adds glue-water to it; but in what preparation my notes do not inform me. The clay must be made into a thick paint, and some soft-soap being dissolved in water, after the rate of about five ounces to the gallon, must be thickened with the clay-water until of the consistence of a thin paint. This daubed well into every crevice, and, indeed, all over the bark, will form a regular coating. I intend, however, to try Mr. Hill's plan this season, and will report the results.

R. ERRINGTON.

EXOTIC NURSERY, KING'S ROAD, LONDON.

MR. J. VEITCH, JUN.

UNLESS one happens to drop in for the "house heating" he has no right to disturb that family until the new household arrangements have been completed, tested, and finally settled; and no man in his senses would ever pop the question before luncheon, as did the "Laird of Cockpen," and got a flat denial, as he ought, which made him "dumbfounded." For many years I knew Mr. Veitch only in his dress suit from Exeter; and, on his coming to London as a star of the first magnitude from the provincial sphere, I knew he must be allowed a sufficient time to regulate his cloak in London before he could have leisure to entertain gossipers. Those who have been endowed with the "second sight," like some of us from the Highlands, know to an inch how things stand at home from merely seeing how a man places a collection of plants for competition. I expected to find everything in the Exotic Nursery in first-rate nursery style; but the style for the winter is much beyond what I believed "would pay." It must pay, however, and that pretty considerably, for Mr. Veitch must have spent a mint of money here before he could have come up in this style, for there is not an inch of his ground here which was not as familiar to me for many years as writing a column of garden gossip. I also know how the piper must be paid when you want the tune to be "extra." Yet, after all, I did not dream of the rapid stride he has effected in the Exotic Nursery in so short a time. Although he was born with a silver spoon in his mouth, that is not the secret of his success. All the money in the mint, and all the philosophy on earth, will not make a man a practical; and, without being thoroughly practical, a man will never stand at the head of the nursery profession.

Mr. Veitch had to "strap to it" when he was young, even attending the fires, sifting coals and cinders

for them, and, no doubt, thought himself an ill-used heir at the time; but here we see what the effects of a good practical training really are when combined with judgment, intelligence, and public spirit. Instead of "feathering his nest" at the first start, according to the adage, he chose rather to lay his foundation on a safer footing by a profuse expenditure to render the nest worthy of the patronage he receives. Every boiler and hot-water pipe on the establishment when he entered he had replaced with the improvements of the day; every house and pit had to be altered to suit the system of the times, and every new addition is even in advance of the current fashion, and yet the new broom did not take the usual sweep; it did not gather up everything good, bad, and the rest of it, into the dust-pan. Nothing of that kind; and here is a sound lesson to all the rulers on the earth, whether they "rule the roost" in the kingdom, the church, the law, or the cottage garden. Everything under the sun can be parsed by some unerring standard as well as Latin. Let every change be proved by the parsing standard, and let nothing that will stand the test be changed in the new sweeping, and, my word for it, you will all of you find it a better bargain than any trust which the greatest confidence can place in a new broom.

The long (157 feet) corridor, leading from the old front entrance of the "Exotic" into the large-domed conservatory—the mansion of the magnificent tree *Rhododendrons*, which would not bloom but once in seven years in Mr. Knight's time—is retained, but is strangely altered. The roof is now "ridge and furrow" of glass from wall to wall, sixteen feet wide. A substantial raised bed for *Camellias* runs along each wall the whole length; and the trained *Camellias* will soon cover every brick of them. The beds for these *Camellias* are edged up on each side of the stone-paved six-foot walk with brick walls to the height of thirty inches or so, with broad copings to stand plants on; the surface of the borders is covered with a coat of Derbyshire spars ground down to the size of small shot. The same material is used for placing pot-plants on. The "placing" is a subject for study, as we shall see next week. In the meantime, let me say that the outer vestibule or lobby to this corridor is put within the old front, that was, in Mr. Knight's time, nearly forty feet in length, but is renewed in glass; and a new wing is added in the same front line to the left and right of it, which occupies the whole front of the grounds, except a road-way on the right and a pathway on the left, the whole front being in the Crystal Palace style of upright glass, and an elegant, light ridge-and-furrow roof supported by equally light iron pillars; and against *each side* of each pillar, not round the pillar, a wire trellis runs up to the springing of the roof, and then runs east and west horizontally in artistic outline, for training suitable climbers against them. The wings are separated from the vestibule by glass divisions, with doors in the centre. The right-hand wing, on entering, is devoted to the finest and rarest stove plants, and as a stove-plant show-house; that on the left is devoted to the most fashionable conservatory plants, and a show-house for that department; while the vestibule itself is occupied by such terrace-garden specimens as need a slight protection in winter. Thus, without entering the threshold, a visitor may see what is in season in all the departments; and on looking through the entrance-door, he sees a long vista through the corridor, the dome-roofed conservatory, the "square" beyond, and on between glass-houses to the farthest extremity of the Nursery, next to the Fulham or Brompton Road.

To make a safe footing for "carriage company" in all weathers, the paths and walks are paved with flag-stone, that resists all appearance of damp, and so rounded in the centre that the wet runs off as fast as it

rains or thaws. Besides the comfort and safety of this arrangement, there is the additional security for the vast traffic among the "hands" in so bustling an establishment, be the weather what it may.

The hot-water boilers do prodigious work in this Nursery. The common pits for young stock may be set down at 4,000 square feet, or ten runs, including one double run of pits sixty feet long, and six feet wide, every inch of which is heated by two-inch hot-water pipes. The double run is a spanned cold pit, as one might say, which is very shallow; and for the youngest of the young is mentioned to show the trick of heating it, which is exactly as was proposed to "The Doctor's Boy." One end of it comes up to near an old house at work, the top and bottom-pipes in which were "tapped," and a small gas-pipe put in as flow and return, which communicate with the two-inch pipes in the pit. No litter nor even any mats are used "to cover up," except on rare occasions, when a very hard frost indeed occurs, and then a single mat is sufficient to save the smallest Heath seedling. If you could reckon the cost of men's time for covering up, the expense of breakage, which is inseparable from the best management for winter-coverings, the dirt and bad colouring of glass, to say nothing of your very best seedling having a chance of standing under a broken pane of glass until it is gone dead, you must come to the conclusion, that what is very costly at first is the cheapest in the long run. However, you must be a better judge for yourself, and never have anything to do with any transaction that will not pay in clear money, in fame, or in real beauty, the three cardinal elements of men's worldly affairs.

Business arrangements at the Exotic Nursery are as follows:—On entering the front door into the vestibule you see two doors at the two opposite corners of the long corridor; the one on the left opens on a large room divided into two establishments—the one is for seeds of all kinds of flowers and flower "roots," the other for every description of "garden-stuff" seeds; the right-hand door leads into the "home-office," where you see the secretaries of state, each in his own "department," with his books and his despatches before him, and his carriers-in-waiting for what is "next and next." From this central-office a door opens to the right, and another to the left again; that to the right communicates with the banking-establishment and the privy-council room, and that on the left into the "governor's" cabinet-office, the whole being fronted Crystal-Palace-wise, and heated by hot water—along with the whole front range, and the entire length of the corridor aforesaid—by one small boiler, which is heated with coke and cinders, and fed once in twelve, or twenty, or twenty-four hours, according as the glass tells of the weather.

When the telegraph is fixed in the governor's office, and on to India and New Zealand, we shall have a Christmas puzzle for the boys, which is this:—A message to New Zealand will reach there twelve hours before it passes out of the Kings's Road. How can that be? That is the puzzle. Another turn of the handles, and we shall all be Yankee-doodles—rank Red Republicans, every man's son of us. The hand-writing is already on the wall, and the decree has gone forth that we are to be "annexed" inevitably with the unions of the United States of America. When the President is in a fix about the decoration of a state's dinner he will telegraph to the Exotic Nursery for "*Vandas*, *Phalænopsis*, *Caudatums*, and *Floriältibus dangléum ex suo roôfum Orkiddy*."

The very first step into the vestibule reveals the grandest secret ever yet made known about the proper cultivation of the loveliest plant in the South American flora—the Lily-like *Copiqua* of the western Patagonians, the climber and lovely-lady-like *Lapageria rosea*. It is a bog-plant after all; you have only to give a "spring"

on to its native bed, and away go the waves from under your heels to the distance of so many yards to all the points of the compass. The roots might well "run near the surface" in such a bed, which suggested the mode of potting to the sagacious authorities at Kew; which mode was, is, and is to be, in a two-feet-wide pan of three inches in depth, full of lumps of peat, and filled in with leaf-mould and good yellow loam; but the grand secret is in the watering. The water must be as cold as the meltings from the snowy heights, and one gallon of it is not too much for every hour in the four and twenty when the plant is in full growth; and yet not a drop of the quantity must ever remain stagnant about the roots. To attain this pitch the border for it in this vestibule is made thus:—A main drain is two feet below the surface, and over it a rubble drainage one foot in depth; over that a *thin, hard, peaty turf* is laid so close as to keep up all sediments from the compost for the roots. This compost is a foot deep, more or less, and is composed of *thick turf* of the above description, quartered into large endurable lumps, these lumps being arranged as regularly as combs in a hive, and nearly as close, the intervening spaces being filled with rough, loose, rich compost, made of equal parts of peat, yellow loam, leaf-mould, and small, stony gravel, up to near the surface, where it is all smooth, but cannot bind. The *Lapageria* was recently planted in this, and started away at once, and is now coming into flower, being a perfect picture of health; and so it might, for "the day before yesterday" it had two fulls of a watering-pot which holds four gallons. Two hundred No. 32-pots of this *Lapageria* are plunged in another house to keep the roots uniformly damp; but the pots are drained as for Orchids, and filled up like the border, but I need hardly say are watered, even now, with the same liberal hand. Thus, then, has the wisdom of practical knowledge snapped another link from the chain of that erring philosophy which insists on a superior degree of warmth or bottom-heat to the roots of all plants indiscriminately.

Jasminum nudiflorum, though quite hardy, is never seen with us in perfection out of doors. It will appear in this collection of nearly hardy popular climbers, and the only one of them all which will grow downwards from the horizontal trellis as freely, and, seemingly, as naturally, as it is for other climbers to grow upwards. *Tecoma jasminoides* is the next, and the supposed difficulty about flowering it will soon vanish. The border is not so rich for this climber as the rest of the borders; but for the first two years the plant will be encouraged so as to cover up rapidly; but the way Mr. Veitch intends to flower it is original, and deserves particular attention. In pruning it, not one of that season's shoots will be spurred, or even stopped. What shoots will be cut "will be cut clean out," so as that no growth comes from that part again, and those not cut will be left their whole length, exactly as the old rule for cutting Gooseberries, or between that and pruning an Apricot. The training goes, or will go, on a peculiar system also. The principal flowering shoots will be trained downwards, which will cause as many more eyes to "break" next season. The more that break the surer the flowers, as they come on short side-shoots; and, when once these little shoots are made, they continue to bloom two or three years or more, according to the state of the roots, and when they cease giving flowers the main shoot which carried them will be cut "clean out," and a young main shoot will be laid in its place, and so on.

Magnolia fuscata is planted at the back, to be trained up like a Peach-tree, and to be pruned that way, for young wood to bloom all over it, so as to scent the whole of the King's Road from end to end, from the middle of May to the middle or end of July, with a delicious

perfume, like Pine Apple mixed with some Arabian spices.

Solanum jasminoides is put in provisionally; first, to cover the trellis faster than they can train, and so clothe a great part of the front while less active climbers are coming up; and secondly, to be kept "for good" if it can be made to produce flowers all through the winter, for making *diadematums* for the young ladies' hair, *alias* flower-wreaths.

After these come several new, or rather newish, *Clematises*, which, like *Carulea*, are sufficiently hardy to stand our climate, but are seen to much better advantage in an Orchard-house temperature, and protected by a glass verandah, or some very cool greenhouse. Of these *Clematis lanuginosa* is, as far as we yet know, the best. It was in flower, and this is the only tribe I made a sad blunder about, in not asking very minutely all about them; and if I once begin to bother nurserymen with letters to make good my own faults, good-by to getting at these secrets, and without seeking them thoroughly it would be as useless to review a nursery as to report one.

My own opinion is that *Clematis Sieboldi*, *C. patens* (which is the proper name of *Carulea*), and the *grandiflora* variety of it, together with *C. lanuginosa*, *C. lanuginosa pallida*, *Sophia*, a continental seedling from *patens*, *alias Carulea grandiflora*, *C. coriacea*, a showy kind from New Holland, and *C. barbellata* from the Himalayas, and some others of recent introduction, should all be grown on their own roots for pot-culture; but when used for trellis-climbers out of pots, I am certain they would answer better if they were grafted on six-inch pieces of the roots of *Clematis montana*. Also, I think that, no matter how they "went off" in rapid growth, they ought to be cut back to near the grafted parts the first two seasons, if not the third, so as to get a thoroughly strong bottom, that would hold on for years and years, and still increase in beauty and strength.

Another fine-looking *Clematis, indivisa lobata*, was new to me; but in such a house as this is—the entrance lobby, as it were—all these hardy house-climbers will assume their native character.

Passiflora carulea, or common Passion-flower, and *Stauntonia latifolia* finish the list of climbers for the vestibule or lobby; but there are a few more to plant yet which are under "consideration."

Now, I want to put particular stress on this list of climbers. No doubt they are selected with great care for styles of growth, fine leaves, or flowers, or both, easy to manage, and sure to stand all sorts of racketing, being near the front door and bustle of such a nursery. With a double mat and a little fern or hay, the tenderest of these could be grown against a south wall or front of a house. If they are good enough to "catch the eye" of all the lords and ladies who call at this Nursery, and are intended to give a good impression of the place, surely they must be worth a place anywhere. But recollect the modes of management for *Lapageria*, the *Tecoma*, and the *Nudiflora Jasmine*, are peculiar, and out of the common.

D BEATON.

HOUSE PLANTS THAT MAY BE IN BLOOM IN SEPTEMBER.

I REGRET that attending to other matters has given occasion to some correspondents to remind me of finishing these lists, because, being a month or two behind, they will not be so able to see some of the plants specified in commercial and other establishments, and thence be able to judge of their fitness for their purposes.

GREENHOUSE PLANTS.

Abelia triflora, *Adesmia viscosa*, *Angophora cordi-*

folia, *Anisomeles furcata*, *Arctotis decumbens*, *Anthropodium paniculatum*; Balsams, *Bækia virgata*, *Bankia verticillata*, *Bauera humilis* and *rubifolia*, *Blæria ericoides*, *Blandfordia intermedia*, *Bossia linophylla*, *Bouvardia versicolor*, *Brachylæna neriifolia*, *Brongniartia podalyrioides*, *Browallia elata* and *speciosa*, *Brugmansias*, *Brunsvigia toxicaria*; *Cacalia articulata* and *Kleinia*, *Chironia linoides* and *serpyllifolia*, *Celosia cristata*, *Clethea arborea*, *Cobæa stipularis*, *scandens*, *Collania dulcis*, *Conostephium pendulum*, *Coronilla viminalis*, *Cotyledon clavifolia*, *cristata*, *Crassula perfoliata*, *Crinum crassifolium*, *Cyphia bulbosa*; *Drakea elastica*, *Drimia altissima*, *elata*; *Echeveria pulverulenta*, *Echites bispinosa*, *Echium strigosum*, *Erica Archeriana*, *calycina*, *carinata*, *concinna*, *declinata*, *exurgens*, *floribunda*, *globosa*, *horizontalis*, *imbricata lactiflora*, *Massoni*, *obtusa*, *pellucida*, *radiata*, *spicata*, *Smithiana*, *laxifolia*, *versicolor major*, *vestita rosea*, &c.; *Eriostemon myoporoides*; *Fourcroya gigantea*, *Freziera thæoides*, *Fuchsias*; *Globulea impressa minor*; *Hæmanthus coccineus*, *Heylockia pusilla*, *Hebenstreitia fruticosa*, *Heliotropium*, *Hermannia inflata*, *Heteromorpha arborescens*, *Hibiscus multifidus*, *Hindsia longiflora*, *Hippeastrums*, *Huernia humilis*, *ocellata*; *Ipomæa crassipes*, *Sellowii*; *Jacquemontia canescens*; *Lagerstrœmia Indica*, *Lantanas*, *Ledocarpum peduncularis*, *Leonotis nepetæfolia*, *Leucadendron arboreum*, *Leycesteria formosa*, *Lightfootia subulata*; *Mesembryanthemum Californicum*, *hirtellum*, *caninum*, *conspicuum*, *foliosum*, *lucidum*, *molle*, *vulpinum*, &c.; *Mimulus*, *Monnina crotalarioides*, *Muraltia filiformis*; *Nerine flexuosa*, *Nierembergias*; *Osteospermum corymbosum*, *Oxalis Cummingii*, *arcuata*, *fallax*, *furcata*, *rigidula*, *Barrelieri*, &c.; *Oxyramphis macrostyla*; *Passion-flowers*, *Pelargoniums*, *Pentlandia miniata*, *lacunosa*, *Petunias*, *Phyllica squarrosa*, *Physianthus albicans*, *Piранthus pullus*, *Plumbago Capensis*, *Priestleya hirsuta*, *Protea mellifera*; *Roellia spicata*, *Roylea elegans*; *Salvia involucrata*, *splendens*, *Samolus litoralis*, *Streptocarpus Rexii*, *Satyrium aureum*, *candidum*, *cornifolium*, *Scævola suaveolens*, *crassifolia*, *Schotia speciosa*, *Scutellaria incarnata*, *Selago canescens*, *Septas canescens*, *Statice Halfordii*; *Tacsonia mollissima*, *Teucrium inflatum*, *flavum*, *marum*, *Asiaticum*, *Thysanotus proliferus*, *Tritoma pumila*; *Valota suavis*, *furva*, *Veltheimia viridiflora*, *Verbenas*, *Verbesina alata*, *Witsenia corymbosa*.

STOVE PLANTS.

Æchmea fulgens, *Ægiphila obovata*, *Agave vivipara*, *Allamanda Schottii*, *neriifolia*, *Amasonia erecta*, *Anthurium rubescens*, *Aphelandra cristata*, *fulgens*; *Barlina purpurea*, *Basella tuberosa*, *Begonia albo-coccinea*, *heracleifolia*, *hirtella*, *manicata*, *odorata*, *nitida*, *parvifolia*; *Beloperone oblongata*, *Besleria pulchella*, *Billbergia fasciata*, *Bromelia bracteata*; *Calathea flavescentes*, *Calotropis gigantea*, *Centroclicium reflexum*, *Clerodendrum paniculatum*, &c., *Coleus Blumei*, &c., *Combretum paniculatum*, *Conradia floribunda*, *Convolvulus pentanthus*, *Crinum Caffre*, *elegans*, *strictum*, *Cymbidium tenuifolium*; *Daubentonia Tripetiana*, *Diastoma ochroleuca*, *Dichorisandra picta*, *discolor*, *Dischidia Bengalensis*, *Dipladenia crassinoda*, *Dumerilia paniculata*, *Duranta Plumieri*; *Echites hirsuta*, *Erisma floribunda*, *Eupatorium odoratum*, *Euphorbia heptagona rubra*, *Evolvulus emarginatus*; *Fimbriaria elegans*, *Fugosia heterophylla*; *Geissomeria aurantiaca*, *fulgida*, *Gesnera discolor*, *zebrina*; *Gloxinia*, very many; *Gossypium Barbadosensis*, *Griffinia parviflora*, *Guatteria virgata*; *Heterotrichum macrodon*, *Heynea trijuga*; *Ipomæa grandiflora*; *Justicia speciosa*; *Leianthus nigricans*, *Lemonia spectabilis*, *Lubegia speciosa*; *Melastoma Banksii*, *sanguinea*, *Micropora parviflora*; *Nepenthes Rafflesiana*, *Niphæa albolineata*, *Nymphæa* of sorts; *Oldenlandias*, *Oxalis monophylla*; *Passiflora alata*, *quadrangularis*, *princeps*, &c.,

Pharbitis varia, *cathartica*, *Learii*, *Phaseolus lobatus*, *Pleroma Benthiana*, *Poivrea coccinea*; *Rhytidophyllum auriculatum*, *Richardsonia scabra*, *Ruellia formosa*, *Ryanæa speciosa*; *Sansevieria Guineensis*, *Scutellaria cordifolia*, *Siphocampylos microstemma*; *Thunbergia* of sorts, *Torenia Asiatica*; *Volkameria aculeata*; *Vriesia glaucophylla*; *Zygopetalum stenochilum*.

The above will suit those who wish to have as much variety as possible in their houses in the autumn months. Limited as the list is, I do not suppose it could be obtained in any single establishment in the country, and a great many of them will seldom be offered or grown for sale so long as the fashion continues to cultivate only a few of free-blooming, easy-grown plants. For amateurs, with small space at their disposal, such lists as the above will only be a useless temptation, as generally their houses are overcrowded already. I feel it to be merely tantalizing beginners when, in accordance with their requests, I give a long list (as long as possible they say) to suit their house of some twenty or thirty feet by twelve or fourteen. I would much rather impress on them the importance of growing comparatively few plants well, and when they are tired of them to begin another group. Thus, for such a greenhouse as I have supposed, what could look better in September than blue and purple *Passion-flowers* suspended from the roof—the white *Mandevilla suaveolens* running along a rod—a few wreaths of the rose-coloured *Tacsonia mollissima* dangling from the highest part of the roof, and masses of blue *Plumbago Capensis* around one or two of the pillars? The shelves or stage might be supplied with bushy *Fuchsias* from last year's plants, cut down in March, and grown to a single stem, or from cuttings struck the previous September, or in March, in a hotbed: those in September would be in full health and in full bloom. Add to these a small group of white and orange *Begonias*, or various coloured *Achimenes*, and scarlet *Clerodendrums*, and *Gesnera zebrina*, from the stove; or, failing these, a group of yellow and crimson *Cockscombs*, from seed sown in a hotbed in March, and a batch of fine double compact *Balsams* from seed sown in April. A few scarlet variegated *Geraniums*, such as *Mountain of Light*, *Alma*, *Flower of the Day*, and *Golden Chain*, well-grown, would lend the charm of variety to the scene; and just to enliven the whole affair with a dash of yellow or orange, have a few plants of *Cassia corymbosa* or *Lantana crocea*, preferring the former; while Musk and Mignonette would give perfume, and a few of the hardier Ferns and Mosses might fill the shady spots, and lend the graces of their foliage.

Then suppose we take a small stove of the above dimensions, we may have *Stephanotis floribunda*, *Passiflora Buonaparteana* and *princeps* on the roof, giving us the colours of white, blue, purple, and pink scarlet; and if there is an *Allamanda cathartica*, that will give yellow. Then the stage would be supplied with bloom from *Gesnera zebrina*, &c., from *Begonias* of many kinds, from *Achimenes*, from *Gloxinias*, kept cool and dry until March or April, or from cuttings, not leaves, taken off in the end of February or the beginning of March. Fine foliage would be got from the large-leaved *Maranta*, the *Crotons*, the *Dracanas*, the *Caladiums*, and such quick-growing plants as *Cissus discolor* and *Coleus Blumei*. As a delightful change again to this variegated and spotted foliage, how interesting would a small group of Ferns be, even though confined to the species of *Adiantums* (Maiden-hair) and *Gymnogramma* alone! Where there is room, plants of *Allamanda* may be grown round a barrel-trellis, and so may *Dipladenia* and other twiners—*Stanhopeas*, *Æschynanthus*; and even the creeping Mosses, as *Lycopodium violaceum*, may be suspended in baskets, and Mosses and other little Ferns be clustered about the edges of the beds or stages. Such plants, with room given to them to show themselves, would be more in-

teresting and satisfactory than greater numbers much crowded, or kept in such a small state that their character can never be fairly seen or appreciated.

R. FISH.

CULTURE OF EXOTIC HEATHS.

(Continued from page 23.)

POTTING.—This is a most important point in the culture of these charming plants. If I had a number of different-sized plants to pot, I would, in the first place, select out all the smaller ones, and prepare the soil for them first. The soil should be chopped and broken, and then passed through a quarter of an inch meshed sieve, reserving the turfy pieces that will not pass through to be used as drainage; then mix this sifted soil very freely with white sand. For larger plants I pass the soil, after it is well broken, through an inch-meshed sieve.

Having made the soil to my mind, I then look out for pots. If they are new and fresh from the pottery I think they are much improved by soaking in water for twelve hours. If old, they should be scoured well, inside and out, till they are perfectly clean. In both cases let them be well dried previously to using. Cleanliness is quite as essential to keep plants healthy as it is to animals. The soil and pots being duly and properly prepared, and put in a convenient place, the next article required is the drainage. The best material for this indispensable ingredient are broken pots. These may be made ready by a boy or a woman on rainy days. They should be in three sizes; one large, to cover the holes at the bottom of the pots; another rather smaller, to cover the largest pieces; and a third broken fine about the size of peas. The largest quantity needful will be of this latter size. I always found it most convenient to have each size put into garden-pans; one of the largest size, two of the smaller, and four of the smallest. These quantities or proportions I generally found correct in using them for potting. All these materials being ready, and placed handy, then commence potting the small plants, using the finer-sifted soil. I would always give a shift, even for these small plants, large enough to allow the finger of the potter round the old ball to press down the soil. I do not approve of a stick for this part of the operation, unless that stick is made of the same form as a finger. Place a large piece of pot over the hole, around it place a layer of the next size, then a rather thicker layer of the third size, and upon that a thin layer of the rough siftings, taking care that they are well sanded. The pot should be deep enough to allow a thin layer of the sifted soil upon the drainage, and to allow the ball of the plant about to be potted to stand just below the rim of the pot; place it in the centre, and then work in the fresh soil well-mixed with sand around it, pressing it firmly down, so that the soil will, when the pot is filled, bear the pressure of the hand without leaving any visible impression; cover the ball, also, with fresh soil; then shake the whole well down, so that when the operation is finished the soil for these small plants will be half an inch below the level of the rim. This space will hold as much water as will thoroughly moisten the whole of the soil in each pot. Proceed thus with all the small plants till they are finished. Should any of the balls, when turned out of the pots, be found dry, such balls should be put into water for an hour or so to soak, so that the water may penetrate to the very centre. Previously to placing the ball in the pot look to the roots. If very much matted, it will be desirable to loosen them carefully a little with a sharp-pointed stick, and to pick out all, or nearly all, of the old drainage. This more especially applies to larger and older plants.

When the smaller plants are all potted, then take the

next size, using, of course, larger pots, and allowing more space between the rim and the old ball. In putting in the fresh soil I generally insert here and there a few pieces of broken sandstone, or, if that is not handy, some roundish pieces of broken pots. These serve to keep the soil open. For these larger plants I use the rougher-sifted soil, and give rather more drainage at the bottom of each pot. For very large plants larger pots and more soil must be used. I suppose such plants to be two feet high, and as much through. In potting such plants I allow fully three inches between the old ball and the sides of the new pots. The same precautions should be taken to loosen the outside of the old ball, and to pick out the old drainage. For such large plants the soil should not be sifted at all, but only well broken with the hand, the roots of Heath or Fern picked out, and also any large stones there may be in it. A larger amount of pieces of broken sandstone may be usefully pressed down amongst the soil, to allow the water to enter more readily to the centre of the ball. Also, a larger space below the rim of each pot should be left to hold sufficient water to thoroughly moisten the large body of earth necessary for such large plants. Large plants also require a proportionate quantity of drainage. I always used half an inch of large pieces, covering entirely the bottom of the pot; then an inch of the second size, and fully an inch and a half of the smallest size, with an inch or more of rough siftings on that layer. The rough siftings are useful to prevent the washing down of the finer particles of the soil amongst the broken pots, and thus choking up the drainage. If all these points in potting are attended to with due care, and due attention paid to other parts of management, I have no fear but the cultivator will find his Heaths grow as freely and flower as abundantly as any other tribe of plants. As soon as all are potted they should have a good watering. The water should be applied through a fine-rosed watering-pot, so that the soil will not be washed into holes, or run over the sides of the pots. The plants should then be placed where they can be sheltered from the sun for a month till fresh roots are produced.

The best season for this operation of potting is in the spring. Any time from the beginning of April to the middle of June will answer. Summer and autumn pottings do not answer so well, because then the plants have not time to fill the new soil with roots; and, in such a case, the soil becomes sodden and sour, and the young roots decay at the ends, the plants become sickly, turn yellow, and die. I have seen many a fine Heath destroyed by late potting.

T. APPLEBY.

(To be continued.)

THE RUBBISH-HEAP AND ITS USES.

THERE are few things that have been longer despised than the Rubbish-heap, yet there are still fewer that might be turned to better account. I am glad, however, to see that the march of progress has not altogether neglected this useful adjunct to all gardens, as the increased quantity of ground brought under spade cultivation in the last few years, as well as the high price of foreign manures, which the enterprising farmer thought it his interest to buy, has led to the more careful adoption of all home-produced materials; and not the least useful of these is the refuse of the garden and other waste, usually collected, or rather, carelessly deposited, in some obscure corner. That a place of this sort is necessary there can be no question; but that it ought to be turned to useful account is also important, and, therefore, a few hints in that way may not be out of place.

I will suppose that circumstances have fixed the site, which is not unusual, where composts for potting and

other purposes are also in store, and if it be accessible to carts all the better. There are some things I would exclude altogether, as being troublesome beyond their value; and on that account I would make it a rule never to throw any of the trimmings of *Horse-radish* into the heap. *Jerusalem Artichokes* are nearly as bad; and if roots of *Dandelion* and *Crowsfoot* could be taken somewhere else, so much the better, as these are sad pests to the garden, and retain their vitality under-ground longer than most weeds. *Couch Grass* decays pretty soon. *Docks* and the *White Convolvulus* are more tenacious of life; but it is to be hoped these are not often found in gardens; neither ought the other to be except in a small state, and all annual weeds may be destroyed in a short time, and with a very slight covering.

Amongst the refuse of vegetables the tops of *Asparagus* are the most durable, and in some light soils the seed buried with them vegetates in due course of time; but these are easily destroyed; but the tops of *Asparagus* may be turned to better account if there is a farm or pig-yard, as they make useful and lasting litter.

Another article which does not decay fast is the stalk of the *Cabbage* and others of that tribe. These had better be stripped of their leaves, and either carried to where the other useless things are put, or burnt in the general rubbish-heap, when sufficient material has been collected to make a fire, which is supposed to include all the useless cuttings of fruit-trees and shrubs, and, in fact, anything that will burn.* This ready way of disposing of a large heap of otherwise useless lumber ought to be made to do some service in other ways; and if the weather is dry, and also the materials, it will burn or char many things that it would be difficult to find a place for elsewhere, and the ashes are excellent manure. Much, however, has been justly said about the waste of such a mode, and I would only advise it with such things as will not decay readily; and if the quantity of useless wood, stumps of trees, and other things be great, the fire may be made to burn some clay as well, which may be done by throwing large lumps of it upon the fire when the latter is in a somewhat solid state, but do not overload it at once; rather add some more a day or so after, and do not by any means throw on any of the small particles until the fire has attained some strength. This, however, is a mode of preparing manure only necessary in some places, and, in fact, cannot well be accomplished in all; it is only alluded to here as a means of making the fire consuming the rubbish available another way as well.

Where pigs are kept much of the refuse vegetable stuff, as *Lettuce* and *Spinach* run to seed, and other things that way, may be thrown to them with advantage; but barrow-loads of weeds, the refuse of the potting-bench, and all vegetable-stalks not eatable by the pig might at once be thrown into the common heap, there to ferment and decay. Tree-leaves might form a heap by themselves; but short grass, if not wanted for heating, might be added to the common heap, and do not let any large quantity of this lie long without turning, as the less they are decomposed before they are applied to the ground again the better, provided that the vitality of everything in the rubbish be destroyed, which can only be done by lying in a mass, but is often accelerated by turning and exposure to the air.

Large stones or other useless matters might be kept out, and the cinder-ashes of the hothouse furnaces, as well as those from the dwelling-house, might be formed into a separate heap for some special purpose, unless the quantity be small, and then the whole might be indiscriminately mixed.

The addition of a few good soakings with liquid-manure may be useful when it can be spared; but I

* Stalks of Cabbages chopped in to small pieces soon decay if dug into the soil.—ED. C. G.

would not, in general, advise lime to be used, unless the material is wanted for immediate use, as there is a loss of some of the most useful ingredients of the heap by an admixture with hot lime, the latter driving it off; but where there are large quantities of herbage of a kind difficult to destroy by the ordinary means of decay, it would be better to add lime, and mix the whole. Decomposition is much aided by this powerful corroder, and the mixture is exceedingly useful in many places.

With respect to where it is prudent to put this fertiliser much difference of opinion exists; but there are a few points which might be noticed here to guide the uninformed. Do not put any on ground intended for seedling beds of anything in the *Cabbage* or *Lettuce* way, and not by any means where *Carrots* are sown, unless it has been liberally doctored with lime. *Potatoes*, *Kidney Beans*, *Peas*, and other things are benefited by it, as, likewise, are all root-crops except *Carrots*, which often suffer much from insects, which this half-decayed compost is said to encourage.

As an adjunct to the rubbish-heap, or rather, as occupying a place near it, the dung-heap ought to be conveniently placed. The hot dung that is brought here ought to be often seen to, otherwise it is apt to burn and become unmanageable; and as the time has now come for using it in the forcing of *Sea-kale* and other things, a little care in turning and mixing will be amply repaid by its after utility. Leaves require less turning, unless intended to decay quickly, when the mixture of earth and lime will hasten that process. In fact, lime acts very quickly that way, and may be applied to many purposes with great advantage, although its indiscriminate use, year after year, on the same ground, has been found prejudicial; but we do not often see this, the consequences of its deficiency being more generally seen.

J. ROBSON.

GENERAL NOTES FOR DECEMBER.

THE present being the most opportune, as it is the most disengaged, season of the year for kitchen-garden operations, should be partly devoted to *drainage* wherever it is necessary; and there are very few places where it is not necessary. Many farmers of the present day have given very instructive lessons and examples of the benefits of drainage. The foundation of most agricultural and horticultural improvements is the removal of all stagnant moisture from the land by drainage. The benefits of such an operation in damp and retentive soils would be soon perceptible in the improved condition of the fruit-trees and vegetables, and in the extirpation of a host of insects, by the more healthy state of vegetation, and the mellow condition of the soil. By such means the soil is, in a comparatively short time, made fertile, dry, warm, and early, and the air is also admitted to the roots of the trees, and which is, also, the principal object in digging, ploughing, &c.

The mode of covering the drains with faggots, straw, or any such decomposable material is very uncertain, as tending ultimately to choke up some portion of the drain with silt. One-inch or two-inch pipes are preferable, to be covered with a few inches of small stones or cinders, with a layer of turf over them, and the soil filled in to the top. The drains to be, on an average, twenty feet apart, nearer on heavy soils, and farther apart on light soils, and from two feet to two feet six inches deep, according to the nature and situation of the soil, and with the main drains three feet six inches deep, and about forty yards apart.

Manuring and trenching are to follow after. The digging to be done by strong three-pronged forks of fourteen inches deep, and seven and a half inches wide, which are preferable to, and more manageable than, the spade, and are also cheaper, as, when worked down, they can be re-laid at a trifling expense. The earth should not be turned out of the trench to a greater depth than ten inches, though the fork should get down as far as thirteen or fourteen, as that which remains at the bottom in the state of what is called

"crumbs" answers the purpose, equally with the earth which is thrown out, of forming a permeable medium for the roots of the fruit-trees or vegetables that are to grow in it.

At this season of the year, with short, foggy, and cloudy days, and the vicissitudes of the external atmosphere being frequently very sudden, it is necessary to be careful that *plants in greenhouses, &c.*, do not suffer so much from damp as to fog off, nor from fire-heat, to be excited into premature growth, which will also increase the difficulty of preserving them through the winter. The general object should be to retain them in a dormant state, and heat and water to be applied as moderately as possible, merely to keep the plants from flagging and frosts. But with plants as with animals, that the system may not be reduced to a point from which it may be doubtful if they would have sufficient stamina to rally, occasional fires in the day will be useful during dull, damp, or rainy weather.

Plants in cold pits that have been excluded from light and change of air during frost, though but for a few days, must not be too suddenly exposed either to cold northerly winds or the direct rays of the sun, but should be very gradually inured to the admission of light and air. A free admission of air, when the weather is favourable, will be advantageous; at the same time care should be taken to prevent, as much as possible, strong currents of dry or cold winds from passing through the houses or pits, as they are very injurious to vegetation.

Camellias, Heaths, Epacrises, &c., now swelling their flower-buds, will require a more liberal supply of water.

As a great deal of rubbish accumulates about the gardens at this season, such as the stems of Hollyhocks, Dahlias, Phloxes, old Pea-sticks, and prunings of fruit-trees and shrubs, it is a good plan to collect them into a *heap to be charred*. By such means they become a more excellent manure for horticultural purposes than is generally appreciated. Let the larger pieces be broken small, and be mixed with the soil for pot-plants, and the ashes to be used in the drills or beds when vegetable seeds are sown. Whoever has seen and inquired the method adopted by charcoal burners will be at no loss how to act. The great object in charring is to produce heat without flame. For that purpose the heap or stack should be piled with a few small faggots, mixed with straw or shavings in the centre, and then the most combustible portion of the materials next to them, and the greenest or most gross part of the rubbish outside, the whole to be covered with earth or green turves, with an opening or chimney in the centre, where the pile or heap is ignited. When properly set a-going, the opening on the top to be gradually stopped as fresh holes are made lower down, which are also to be stopped by degrees until they ultimately reach the bottom, when the whole are to be closed, and carefully watched to exclude air, and an additional covering put on where there is any appearance or danger of smoke or flame breaking through; a few days more and the charring process is finished.

Protection is indispensably necessary for all such plants and vegetables as are susceptible of injury from frosts, that may now, after the late forewarnings of their severe approach, be expected to visit us with greater severity before Christmas. All stores of Potatoes, Carrots, Beet, and other such roots, should be examined, and any defective ones removed. Cover the stores merely sufficiently to exclude frost without fear of generating heat in the mass to excite growth, or to produce putrefaction. When *Rhododendrons, Azaleas*, and other such showy American plants, are growing either singly or in masses, and exhibit any indications of having exhausted the soil, they should be supplied with a top-dressing, three or four inches thick, of leaf-mould, rotten dung, or, which is best, cow-dung, to give vigour to the plants for flowering. It will also prevent rapid evaporation in summer, and will keep the ground cool and moist, which is essential to the successful management of this beautiful tribe of plants.

All *vacant pieces of ground* should be deeply dug or trenched, leaving the surface in ridges, or as rough as possible, and all composts, soils, and manures frequently turned, to expose them to the pulverizing and grub-destroying influences of frosts and thaws.—WILLIAM KEANE.

THE POTATO MURRAIN.

A good deal has been said, at different times, touching the Potato disease; yet, from all that has been said, very little has been ascertained respecting its immediate cause, so far as to enable us to apply any remedy or preventive of a permanent kind. Still, like many other diseases, if we cannot altogether prevent it, we have the power to remove some of the causes that help to produce it, or to reduce it to a milder form when it is produced. I believe that that improvement must be effected chiefly in the management of the ground that Potatoes are planted in, and by planting the sorts that will suit the locality.

From what I have observed at different times, let the season be what it will, I have always found the crop to be good where the ground was naturally or artificially made dry, but not shaded. In the year 1850 I found the roots near to Black Currant bushes were sound, and free from disease; but not so under Apple and Medlar-trees of low growth, though equally dry; also in a bed that had been dug deep the previous year, and had been planted with Cabbages.

In the spring of that year a man in the neighbourhood caught a mole uninjured; I gave him threepence for it, and turned it into the garden. I was called a fool for my pains. This mole made runs under every row in the above bed, and this bed was more productive than those other adjoining beds of the same size. This mole also completely tunnelled a bed of Cabbage-plants that stood the winter, and that was the earliest and best bed of Cabbages ever remembered in that garden, even by men who had lived on the premises for forty years.

Before the introduction of the mole the garden was very much infested with the surface-grub mentioned by Mr. Robson the other day; but the mole very soon cleared them away, and we had but few plants eaten off after that time during our stay there. But this is apart from my purpose.

I believe most people will admit that deep digging is advantageous to insure a crop of Potatoes, as is, also, early planting. And so say I; but not so early as to be cut off with the frost before the middle of May. I believe it is an advantage, in the generality of seasons, to get them ripe before the days begin to shorten, or the nights get cold, as the earth and vegetation will take more moisture, consequently they will be kept dryer; but, at the same time, I am of opinion that, be the time of planting whatever it may, if a quantity of rain falls at a certain age of their growth, the Potatoes are sure to be diseased; and, from my own observation, I conclude that that age is from the time they are from about half-grown to full-grown; for I well remember, in the year 1853, July was a wet month, and the Potatoes generally were very bad.

A neighbour of ours planted as we did some ship Potatoes. We planted in March, and although we had a good crop in size and quantity, the Potatoes were very badly diseased. Our neighbour could not plant till the end of May, having a crop of Broccoli on the ground; and although his Potatoes were affected in the top at the time ours were, only not so much, yet the dry weather revived them again, and he dug a most excellent crop both in quantity and quality.

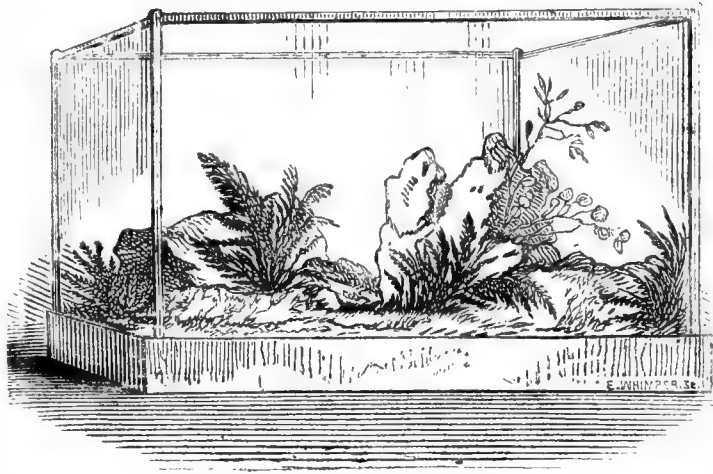
Also, there was a farmer in the neighbourhood who was generally "mowing when other people were busy sowing," had about two acres of Potatoes planted at about the same time, and they were only a few inches high, and were being earthed up at the wet time. People in the neighbourhood said, were they theirs they would plough them up and sow Turnips, and, had he been more thrifty, probably he would have done so; but he had a better crop than his neighbours.

In the year 1852 the portion I rented was partly a wheat stubble, and partly where Swedes had been fed off by sheep. The farmer favoured me by letting me have a part of the latter. The ground generally was poor, high, and dry—very shallow on the Bath White. Now, the part that had the Swedes on yielded Potatoes larger and more in number, but much more diseased than on the other part. I attributed it to the treading of the ground by the sheep; for, on a part where the Swedes had been carted home and not trodden, the Potatoes were very much better than on either of the other parts.

Now, my preventive practice is to dig deep, and to plant in the latter part of March. I do not approve of autumn planting. The ground gets wet and sodden during the winter. I trench the Potatoes in, and do not put a foot on the ground after till I am obliged to, and I plant only the sorts adapted to the situation. I do not plant deep, but mould up as high and as early as I can.

I believe, too, that the same cause that affects the Potatoes affects the Mushrooms as well, for I have not seen any of spontaneous growth of any account since the appearance of the Potato disease. I have a spot in an orchard that produces a quantity of the large Mushrooms every year. I have gathered a quantity within the last fortnight. If I should make a bed next year, and put spits from the above spot, may I have any probability of growing any Mushrooms from them?—THE DOCTOR'S BOY.

CHEAP FERNERY.



THE following account of a simple Fernery may be of use to those readers of THE COTTAGE GARDENER who are unable to purchase an expensive glass shade:—

Procure five pieces of glass for the sides and top of the case. Bind each *all round* the edge with a piece of scarlet galloon. Sarsnet ribbon will do equally as well as galloon for binding the glass. It should be scarlet, to contrast with the green of the Ferns. The galloon is not fixed to the glass with any cement; this is wholly unnecessary.

Any lady could understand how it is done at once: it is not so easy to explain. The galloon is doubled over the edge of the glass, and stretched tightly all round the edge, being sewn at the corners. Each piece of glass thus bound round is sewn to its fellows by the galloon binding. The top is put on in the same way. If properly sewn, the case is perfectly strong. Mine was made by a lady in about half an hour; but it is not a large size, only holding six Ferns of a small description. The ventilation is just sufficient to keep the Ferns healthy without propping up the edge of the frame, as is a common plan. My case cost 11d., not including the tray. Plant the Ferns among broken pieces of clinker in a wooden or zinc tray, water, and cover with the frame. The sketch above is from a case of this description, which I have had in use four months.—E. A. COPLAND, Bellefield, Chelmsford.

UNRIPE MELONS AND TOMATOES.

It may be of use to some of your many readers who grow Melons to know that they are not always to be thrown away as utterly useless if gathered late in the season, hard, half-grown, and unripe.

About a month ago, three or four of *Fleming's Hybrid Cashmere* (an admirable and delicious green-fleshed fruit), were condemned by my gardener to the manure-heap. They were a second crop, and, with declining heat and a less powerful sun, it was thought hopeless to give them a further trial.

By my suggestion they were gathered and placed on my kitchen-dresser, and after three weeks' warmth turned out

as ripe, luscious, and melting as if they had not been removed from the garden-frames.

I may add, that I treat Tomatoes much in the same way; those that are picked green just before the frost commences are hung up in the kitchen to ripen. By this means last year I had a constant succession so late as even the middle of January.—WM. J. JENKINS, Rector of Fillingham.

TAYLOR'S HIVES.

I AM frequently interested by the correspondence in THE COTTAGE GARDENER on the subject of bee management, which, as all experience shows, requires to be varied according to circumstances, locality, &c. In your last publication (No. 424), Mr. D. G. McLellan alludes to his experience of Mr. Taylor's Hive (meaning, I suppose, his storifying boxes), which certainly does not correspond with my own. My object at present, however, is to notice the error into which the writer has fallen when he says, "The giving of an additional room *below* forms no part of Mr. Taylor's plan." It seems to me Mr. McLellan has advanced no further than an old edition of the *Bee-Keeper's Manual*, for, in my own copy, the *fifth edition* (a much enlarged work), the principle of under-hiving is distinctly provided for, shown in the engraving (p. 53), and explained subsequently by the author, who says (p. 59), that the box No. 3 of the set is equally well adapted to be used either as a super or nadir, and he elsewhere calls attention to this application of it.—C. A. L., Gloucestershire.

NEW AND RARE PLANTS.

PELARGONIUM ENDLICHERIANUM (*Endlicher's Crane's-Bill*).

This is one of the very few species native of other places than the Cape of Good Hope. It is from the western Taurus, in Asia. Its petals are purplish-crimson. It flowered in a cool greenhouse at Copenhagen in July, 1856. A few species of this genus have been found in South Australia and the South Sea Islands.—*Botanical Magazine*, t. 4946.

MORICANDIA RAMBURII (*Rambur's Moricandia*).

Hardy perennial, native of the mountains of Granada, in Spain. Flowers pale purple.—*Ibid*, t. 4947.

GALIPEA MACROPHYLLA (*Large-leaved Galipea*).

By various botanists this has been included in the following genera:—*Conchocarpus*, *Raputia*, *Sciuris*, *Obentonia*, and *Erythrochiton*; but they all agree that it belongs to the *Rue-worts* (Rutaceæ). It is a native of Brazil, and requires to be grown in a stove. Its flowers are pale pink.—*Ibid*, t. 4948.

HYPERICUM OBLONGIFOLIUM (*Oblong-leaved St. John's-wort*).

A very lovely evergreen, with bright yellow, large flowers, and quite hardy. Native of northern India, Nepaul, and the Himalayas, up to as high as 12,000 feet. Sent by Mr. W. Lobb to Messrs. Veitch and Son, of the Chelsea and Exeter Nurseries. It is a great acquisition, and we agree with Sir W. Hooker in thinking "it will soon find its way into every garden and every shrubbery."—*Ibid*, t. 4949.

AGAVE STRIATA (*Streaked-leaved Agave*).

Native of Real del Monte, in Mexico.—*Ibid*, t. 4950.

PACHYPHYTUM BRACTEOSUM (*Bracteated Pachyphytum*).

This is a solitary species, very unique in its appearance, on which has been founded a new genus. It belongs to the Natural Order of *Houseleeks* (Crassulacæ); to *Decandria Pentagynia*; and is nearly allied to *Echeveria*. The leaves and calyx are intensely pale, glaucous grey, and contrast most strikingly with the scarlet petals and golden anthers. Native of Mexico, and requiring a temperate greenhouse. Blooms in summer.—*Ibid*, t. 4951.

STONE FRUIT-TREE MANAGEMENT.

HAVING at various times been asked to give a few hints on the management of the young fruit-tree from the nursery to maturity, and this being, or, at least, ought to be, their only planting season of the whole year, I take the present opportunity to do as requested. First of all, I beg it to be clearly understood that I am quite aware that a large number of our first-class gardeners are fully acquainted with the management of the fruit-tree in all its stages of growth. Yet there are various opinions existing among good gardeners as to such management, differences which would not exist if all bore in mind the results aimed at, viz., early productiveness, health, good quality of fruit, and neatness in training.

I have found no other method in all my practice that has surpassed the one I am about to relate; but these details are more intended for that class of gardeners who know everything, but, in fact, know nothing practically. Often, on going into gentlemen's gardens, I have felt ashamed to see what were fine young trees once, but now spoiled. I will go farther, and say that I have travelled about with some of the best nurserymen in London, and have heard gentlemen say to them, "Those were bad trees you sent me last year, and very highly charged." And well they might say so, when we saw the once fine trees, but now mutilated and stumped, as Fig. 4 shows, and fully three times less in size than they were when sent from the nursery.

Again, all practical men must allow that it must be disagreeable to the feelings of any respectable nurseryman to see his good trees sacrificed through bad management; but let this be considered another day. I will suppose that the borders are well drained, made with good maiden loam, well intermixed with old, rotten dung, and the trees planted.

The following drawings will better show my simple method of managing them:—

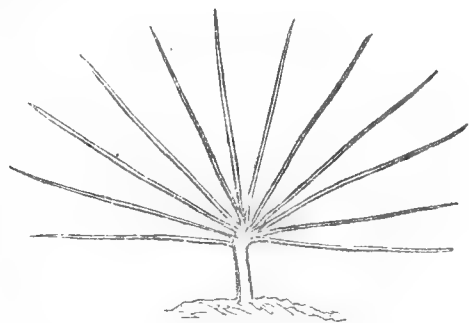


Fig. 1 is a tree from the nursery, perfect in leaders, and requiring only to be nailed to the wall, and not to be cut down when planted.

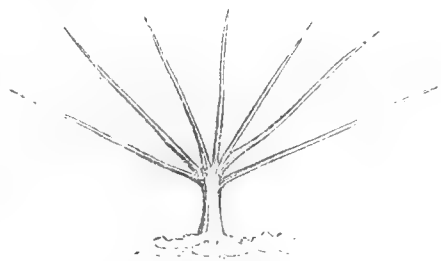


Fig. 2 is an imperfectly trained tree from the nursery, and requires the three leaders on each side to be laid lower to their proper places, the centre one only being cut back in the spring, to obtain the proper number of leaders to make the tree perfect.

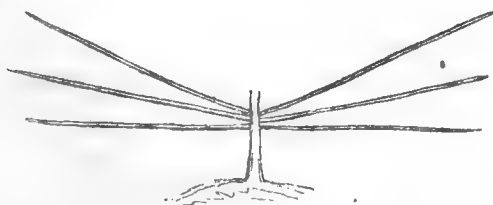


Fig. 3 shows Fig. 2 with the side leaders laid to their

proper places, the centre one only cut back to four or five eyes.



Fig. 4 shows the remains of a perfect tree from the nursery last season, but which has been cut in and stumped by some one ignorant of the art of wall-fruit training.



Fig. 5 shows Fig. 1, after two or three years' good management by real, good, practical gardeners, full of fruit.

These remarks are only applicable to the stone-fruit class. My readers may perceive that I am no advocate for the knife being used much on these kinds of fruit, and especially sparingly when first planted. Those who wish to have sound trees must remember, as I do, to use the finger and thumb freely at the disbudding season.—D. H. KIDD, *Gardener to the Marquis of Breadalbane.*

PROTECTING HIVES IN WINTER.

WINTER being at hand, hives should be well sheltered from the weather, especially from damp, which is more injurious to bees than severe dry cold. Some wooden hives are so constructed as to keep out the drip both from rain and snow; but all sorts of hives are best under some extra covering in winter. Some apiarians remove them to the north side of walls, or into dry sheds; but, if hives are well protected where they stood in summer, there they may stand in winter. Common hives are protected in various ways, but, perhaps, thatching them with wheat or rye straw is the best. It not only makes them to be less influenced by the changes of the weather, but gives the hives a snug appearance. We have often seen that plan in Scotland, and how well it betokened the industrious habits of the owner, when compared with his next neighbour's slovenly plan of covering his hives with dry turf. Lately we visited a friend's garden, and could not help admiring his row of bee-hives placed on separate pedestals, each one covered with a milk-pan large enough to throw the wet or drip beyond the board or floor of the hives. Besides the common hives, there were also some wooden and glass ones in excellent condition; their dazzling appearance, however, when compared to the lowly cottager's hives, was like that of the splendid mansion in contrast with the humble cottage. Some leave the doorways of the hives open, others close them in winter. I have tried both plans, and found the latter the best, leaving, however, a small opening for air. This not only prevents the bees from getting out in sunshine, and falling benumbed among snow, but it is a bar against the large tomtit, who often slyly raps on hives, and picks up the bees as soon as they appear.—J. WIGHTON.

BEES DYING IN WELL STORED HIVES.

I SHALL not attempt to reconcile Mr. Wighton's conflicting statements regarding pollen, but will content myself by

hazarding a conjecture upon what it is that causes the death of bees in winter, although having a supply of honey, and it is this.

Some fatal accident befalls the queen at a time when there are no grubs in a stage of existence fit for the bees to make another. The bees soon reach the limit of their days, and no young, through the absence of a queen, succeeding, they dwindle and die, and die and dwindle, till all are dead. I should like to have the opinion of apiarists on this hypothesis.—D. G. McLELLAN, *Ratherglen*.

QUERIES AND ANSWERS.

BULBS TO FLOWER AT CHRISTMAS.

In answer to "G. B. C.," I do not at all approve of placing your bulbs, when potted on the 1st of October, on the open shelves of a greenhouse. They are exposed to too many changes of temperature and moisture to root freely. Hence the advantage of the method of which you inquire—of placing the bulbs in a sheltered spot out of doors when potted, and covering them six inches or a foot over with ashes, old tan, &c. I disapprove, however, of sinking them in the ground to effect this, as that has a tendency to damp and mould the bulbs, and even to make the soil in the pots too moist. After the bulbs are placed in rich, sandy loam, well drained, in the manner for different varieties as described in previous volumes, preferring smallish pots to very large ones, they should be placed in a position out of doors higher than the surrounding ground, and then be covered over as stated. If such bulbs are covered for about half their depth in the pots, that will be sufficient. Earth should then be placed round their necks cone fashion. The covering material will have a tendency to press the bulb a little firmer and deeper. Supposing the potting was done in October, I prefer covering the bulbs slightly at first, merely two or three inches. If the soil used for potting them is moistish, there will just be enough of moisture about the base of the bulb, combined with the heat still remaining in the ground on which they are placed, to cause them to root freely. As the weather gets colder in November a little more covering may be put on until it reaches from six to twelve inches thick, especially if the frost should be severe. When that is the case I prefer covering all over with a little sweet litter in preference to having above six or eight inches of material over the pots. Even though placed on an elevated position, I should also use boards or thatched hurdles to keep off heavy rains or falls of snow, removing the latter, at least, before it melted. Under such treatment the pots, in about six weeks, will have a well-laced ball of roots, and the flower-stems will just be pushing. Then, and not before, is the time for commencing forcing. Without abundance of roots the more heat you give the more mischief you commit. The stem is made to advance, and there is no correlative action of the roots to support it; and hence "weakly" and defective blooming. The same holds good even with Hyacinths in glasses in warmish sitting-rooms. We have often seen the advantage of filling the glasses with water about 60°, and then packing them up to the neck in dry moss or wadding, while the upper part of the bulb was left unprotected; and thus the glasses were full of roots before the flower-bud was doing more than moving.

Supposing that your Hyacinths, for instance, in pots are thus thoroughly well rooted, and not before, you may put them into such temperature as you speak of, from 55° to 65°, with the prospect of getting good blooms in a month or six weeks, according to the weather. They dearly like bottom-heat, especially at this early season, and that may range from 70° to 80°. Coming from such a position in the open air as I have adverted to, they should not be plunged at once; and neither should the yellow-looking buds be exposed at once to sunshine. Merely place in the bed at first, and shade from sunshine until the young leaves get their green tinge, when it will be little necessary. When the plants have stood several days in the bed, then plunge the pots, and if you want them quickly you may gradually raise the temperature from 55° to 60° at night, and 70° to 75° during the day, with sunshine. Even with all this care the flower-stems, at this early season, are apt to come short and dumpy at times, so that room cannot be given for the ex-

pansion of the flowers. I will, therefore, mention as a great secret a simple means I used for making the flower-stalks lengthen nicely; so nicely, that he was a very obstinate fellow of a Hyacinth indeed that could resist the charm. Stout brown or other paper was made into funnels from six to nine inches long, and so wide at the base end as to include the bulb and a good portion of the soil in the pot on which it stood. If you saw a number lying you would think we were going to turn grocers, and distribute conical-shaped pounds of sugar or raisins. The only difference is, that our conical funnel, instead of being twisted into a close point, so that the sugar, &c., could not get out, has a hole half an inch or so in diameter open there. When the funnel is placed over the bulb, the hole lets in just enough of light to prevent anything like blanching; while the combined influence of shade and increased heat contained all round the stem force it up more gently than a wire is lengthened by heat and a pair of pincers. When the flower-stem is long enough, remove the funnel. By such means I generally managed to get good flowers from weak and condensed starts when the roots were all right in the first place. I have often taken half a dozen of such flowers, left three alone, and three I applied the funnels to, and in almost every case the former failed and the latter succeeded. At an early season, were I forcing these bulbs early again, I would funnel every one of them. One copy of the *Times* newspaper would make ever so many funnels.

WINTERING ALOES, CACTI, MELOCACTI, &c.

Our correspondent has twelve dozen of these. They will do admirably in the house he speaks of with an average temperature of 50° till February. If they have been so long potted as to fill the pots with roots, they will be quite as well standing on the bed without bottom-heat. Those that have recently been potted are small, and roots not got to the sides of the pot will be better plunged in a mild bottom-heat, say averaging about 70°. After February you can hardly give them too much top-heat, say ranging from 65° to 75° artificial heat, and from 70° to 90° sun heat; but the light must be direct, and not shaded by Cucumbers or anything else.

AGERATUM CONYZOIDES NOT FLOWERING.

This is not a white variety so far as I am aware. It is a light greyish-blue; but, provided your plants were at all strong when planted out in the end of May, I cannot conceive what could be the reason it did not bloom, as the *Mexicanum* has done so. As that has flowered late, I suspect you raised both from seeds, or planted out very late cuttings, as fairish plants of *Mexicanum* from cuttings ought to be in full bloom by the middle and end of July.

KILLING THE BUG ON PINE-APPLES.

"AN ANXIOUS INQUIRER" had far better have burned the crowns he received from India, instead of attempting to get a stock from such sources. Unless you are sure of getting some fine new kind, the risk attending such importations far exceeds their value. In all cases such importations of Pines should be kept closely by themselves, and apart from anything else, and at a good distance too. I have known a few crowns of such Pines spread the pest over a whole establishment, and conquered only after years of vexatious and unremitting trouble. Now for curing. A rank dung-heat, full of strong ammoniacal gas, will kill all the insects above-ground, and this continued will settle them all in time. That time, however, may be long, as, when much attacked, the downy gentlemen will retreat to the roots, and they will hang there like little carbuncles when you have long ceased to see one on the foliage. If you cannot make up your mind to burn the whole, try the following, which I have known to be effectual:—Boil a pound of tobacco in a gallon or two of water for half an hour or so, and, when settled, pour off the liquor. Melt a pound of soft-soap and a pound of size or glue in warm water. Take a pound of flowers of sulphur, mix it up into a paste, so that it will easily mix with water afterwards. Add to it one gill or quarter of turpentine. Mix the whole well together in a tub containing about twelve gallons of water, and at a

temperature of 125° to 130°. Stir it all well about, and continue stirring, and then take the Pine-plants, and swinge them through the liquid, root and top, seeing that every part and every axil is thoroughly *washed and wetted*. Let them drain into the tub, and set them aside, tops downwards, to drip and dry. In a day or two, swinge again in clear water at 120°, and drain again, and, when dry, pot and plunge in a sweet bottom-heat, after having thoroughly renewed the beds, white-washed, and painted, and thoroughly cleaned the house. Still, if not extra valuable, I would advise turning the whole adrift before more mischief is done.

LEAVES FOR LEAF-MOULD.

Nothing can answer better than Elm and Sycamore. Beech is more valuable for giving heat, and keeps longer, and, therefore, it requires more time to rot into mould. Oak-leaves are the most lasting; but they require two years, at least, to make good leaf-mould, just because they are so lasting for hotbeds, and also because containing so much gallic acid. We find nothing comes amiss for this purpose except the Fir or Pine tribe, and even they are useful for some purposes if kept long enough. The softest leaves that you gather now, even though you ferment them by throwing them into a heap, and turn that heap frequently, will require the greater part of a twelvemonth to be in nice order for potting, though I have used them, after being well fermented, and then dried in cakes, in less than six months. If you want a stock early, keep your Maple, Sycamore, Ash, and Elm together by themselves. As stated, Oak are the most lasting for beds and giving bottom-heat.

POTTED FRUIT-TREES AND STRAWBERRY-POTS.

Make use of your wall by all means. Every tree and plant in a pot that you intend to force in pots should have its roots protected alike from severe frosts and heavy rains. Whatever mode you can do this best by, and most economically, adopt it at once. Many a failure in these matters is owing to sodden, and broken, and killed roots. Everything in a pot is in a more artificial state than if growing in the ground, and must be guarded from accidents and extremes accordingly. Plunge your pots at once, and keep them dry.

FORCING STRAWBERRIES AND PUTTING THEM IN A PINE-PIT, &c.

Unless your shelf is near the ventilators, and you can give plenty of air, it is best to stack your Strawberries in a mild hotbed, but plunging them only a little. To gather on the 1st of January, you would require so to commence on the 1st of November, and with plants with buds well ripened and prepared. As the days lengthen, less time will be necessary. If you commence on Christmas Day, you may expect to gather about the end of February or the beginning of March. Much depends on the fitness of the plants, and giving them heat gradually, and not over-watering until the fruit is set and swelling. The *Black Prince* is the earliest, and a good, most prolific Strawberry, if properly managed, that *properly* greatly consisting in not having it in a higher temperature than from 55° to 65° at night, with a rise of 10° from sunshine, commencing with about 50°.

CINDERS AS DRAINAGE, AND PLACING LIME OVER THE POTS TO KEEP OUT WORMS.

I see no objection to this in the case of fruit-trees in pots; but I should not like to adopt it with plants in general. I should much prefer charcoal, or a few crocks, and then charcoal. The lime will only keep out worms while fresh and acrid; when it becomes mild it will be of no more service in this respect than chalk or other earth. In fresh-potted fruit-trees it will be mild enough before the roots get into it. The *Black Raisin Grape* is what is called the *Black Corinth*, &c., a hardy kind, with small bunches, small berries, and rather pleasant juice. The *Parsley-leaved Vine*

is the sort of which you have sent a specimen. It is more pretty than profitable. The leaves are rather the best of it, as it is inferior to many other white Grapes. The bunches are generally fair-sized; but the berries are rather small. Unless in very favourable situations it requires a Vinery. I have no doubt you will fruit it either in your Pine-stove or Vinery. Send fewer questions at a time.—R. FISH.

HOUSE SEWAGE AS A MANURE.

"I have a small garden, which I have hitherto kept in tolerable order by expending a deal of manure on it. A short time since I had a tank made, which is the recipient of all the house sewage. May this be used with beneficial effect on ground before cropping with a garden-engine and carriage? I could, at various times, water my whole garden properly, and, if this would answer, it would be the means of saving me much expense.—PUMP."

[You have at your command one of the most valuable of fertilizers. Whenever the tank requires emptying, pour its contents over vacant ground, or apply it to growing crops of Cabbages, Lettuces, Onions, Asparagus, and Rhubarb. We make a trench by the side of these crops, and fill it with the sewage whenever we think they require such powerful nourishment. House sewage is not only a very rich manure, but it is in the best state for application—that of a liquid.]

HEATING A PIT FROM A STEAMING APPARATUS.

"I am about putting up in a building now erecting a boiler for steaming food for my cattle. This is to stand against the gable of the building in the interior, and I fancy that I might manage, on the exterior of the same gable, which is due south, to contrive some manner of place to heat a small building for the striking of cuttings and preservation of tender plants through the winter. A pipe from the boiler might easily be carried through the gable to the exterior side; but how to make the best use of it I do not know. A small, inexpensive place is what I wish for.—REV. C. T."

[You might heat either by steam or hot water; but, under the circumstances, we would greatly prefer the latter. To do this effectually you must have two pipes from your boiler through the gable end; one near the bottom for a return-pipe, and one as high up in the boiler as the water is likely to stand at for a flow-pipe. These things secured, you may have a greenhouse, a plant-stove, a propagating-house, or merely a pit for keeping and propagating just as you like, and in proportion to the quantity of piping used. Thus, supposing your house was twenty feet long, and twelve feet high at back, and as much wide, a three or four-inch pipe all round, or half round and returning, would be sufficient to keep out frost. A similar house for tender plants, to keep up a medium heat of 60° in winter, would require double that piping. Do you mean a structure in the shape of a pit for keeping out frost? then a flow-pipe of three inches would be amply sufficient. Did you want bottom-heat, then two others beneath a bed of rubble, covered with sand or tan, would supply that. For amateurs it is always desirable to get inside, even though a pathway should be considerably sunk beneath the ground-level. Thus, suppose your back-wall is four feet and a half, your front one foot and a half, width nine feet, a pathway in the middle sunk two feet, and three feet wide, you would have a three-feet bed on each side, which you could supply with bottom-heat, and top-heat as well. Or, suppose you had a simple pit, three feet at back, and fifteen inches in front, and six feet wide, a flow and return four-inch pipe beneath a bed of rubble would give you enough of bottom-heat, after March, for propagating, and top-heat enough besides, by having a four-inch drain-tile standing upright from near the pipe through the rubble, and into the atmosphere of the pit, the ends to be plugged or opened as top-heat was wanted, or the reverse. In winter, when you merely wanted to preserve, the pipes being open, a little heat would do. If you tell us what you decide on, and we can be of use further, we shall be glad.]

GERANIUM DIADEMATUM.

"I beg to inform Mr. Beaton that I am not mistaken about the identity of *Geranium diadematum*; and when I explain that my stock originally came from the fountain-head, Shrubland, during the time he lived there, he will, without seeing a leaf of it, readily imagine it to be the true variety. Early one morning in September, 1851, I paid a visit to the Shrubland Gardens, and, as Mr. Beaton was there to show me round, I took particular care to ask him to point out the plants he had recommended for bedding in the pages of THE COTTAGE GARDENER; and, as I had tried unsuccessfully to obtain this *Geranium* in London, as soon as I saw it I begged him to give me a cutting, which he very kindly did. Of course, I set to work the following year to increase it as much as possible, and as it is not very difficult to strike, I soon obtained a stock of it, and it has ever since remained the "pet plant" of my garden. I got several other good things at the same time, which continue to hold a prominent position "here." Among them are *Cineraria maritima*, *Lady Middleton Geranium*, *Shrubland White Petunia*, &c.

"I recollect Mr. Beaton told me at the time that it was owing to my good fortune in having come alone that he was able to give me a single cutting. I consider myself still more fortunate now in being able to repay the attention I then received. I shall be very happy to let Mr. Beaton have a stock of this most beautiful bedding *Geranium* again. My old plants of it have been potted, without cutting them much down; they will, therefore, yield a good supply of cuttings in the spring; or, if Mr. Beaton prefers having a few rooted plants of it, I shall have great pleasure in sending them whenever he pleases.

"As it may be sought after in the spring, I may here mention, that I not long back gave some plants of it to the Messrs. Henderson, at the Wellington Nursery, St. John's Wood, in exchange for their *Crystal Palace Dahlia*, which, by the way, I hear will disappoint me; and I have no doubt they will offer it for sale in their next Catalogue.

"I have had six varieties of this *Diadematum Geranium*. 1st, the one above mentioned; 2nd, the well-known *D. rubescens*; 3rd, *D. monstrosus*, the semi-double variety. I had it in my garden twelve months before it became known as *Wilmore's Surprise*. 4th, *D. regium*, a shy grower, and, with me, not darker than *rubescens*, only that the upper petals are more marked. 5th, *D. bicolor*, which I have lost, with a very distinctly-marked pink and white flower. It did not make wood enough for a bed; but perhaps I did not plant it in soil sufficiently rich. Lastly, a distinct sort, which was sent to me as the old pink variety, but which turned out to be similar to *D. bicolor* in habit and constitution, but with a flower deeply veined.—R. L."

[I recollect "R. L.'s" visit to Shrubland as if it were but yesterday. I was an old man then; but "R. L." is older now, and I am much younger. To keep up the credit of memory, I must admit what he says in the matter of giving cuttings away to strangers. In large establishments the rule with gardeners is, that the employer never buys the same kind of plant but once during the tenure of service of one gardener. Ambition is allowed to rule the number of plants to be increased from all new kinds; self-interest is allowed to suggest the possibility of losing this plant before it is increased at all; self-pride would recoil from the idea of asking "the governor" to buy it over again; and the man, or rather, the ass, who would not give away freely, could never expect to receive in return. No "gentleman" ever interferes in these matters, which are well understood from the Queen's garden downwards. In olden times some nurserymen did not like the plan; but I never met with one of them for the last twenty years who did not approve of it, saying, "It is just like your cheap literature; the more you circulate the more it is called for, and so with plants." Over and above all that, the owners of Shrubland Park have always been noted for their liberality in giving away their seedlings and bedding-plants, and the "exchanges" they never interfered with. They were the very first who responded to the wants of the "Experimental Garden," and sure am I that they will be the last to grudge it—a long-lost plant from their own garden—cuttings of which, when the frost is well over in the spring, will be thankfully received.

I hope that Mr. Henderson is aware of the history of the plant.—D. BEATON.]

EVERGREEN UNDERWOOD FOR PLANTATIONS.

"In THE COTTAGE GARDENER, November 4th, Mr. Ferguson says, 'I find the Silver Fir the best tree for filling up neglected ornamental plantations that I am acquainted with, as no other tree that I have observed accommodates itself so well under others.' Now, I am sorely puzzled how best to remedy the fault of my predecessor (I am a country vicar), who, thirty years ago, planted the vicarage grounds with forest-trees, without the admixture of a single evergreen. I have a belt on the south side of my lawn of tall Sycamores, Beeches, Limes, like scaffold poles, fifty feet high, in all their bare nakedness except at the top. In another place my drive goes THROUGH the same trees, and the look of the bare ground amongst them is untidy and cheerless enough. I planted Laurel three years ago; but that was before I learnt the uselessness of such a course from the pages of THE COTTAGE GARDENER. I now know all about planting in tubs, boxes, &c., and was preparing to do something of the kind, however troublesome and expensive. But how now about Mr. Ferguson's *Silver Firs*? Shall I get a lot, and carefully take out good holes for them amongst the thirty-feet-high Sycamores and Chestnuts? and will not *Berberis aquifolia* grow in the same place? It looks as if, with its abundant roots, it was safe to grow anywhere. I have small faith in Laurels growing in such a situation, even in tubs, on account of the drip. I should mention that, feeling so uncertain as to the success of ANY plantings under established forest-trees, I was thinking of getting lots of roots from the woods, and piling them up along the sides of the drive, to cover with Ivy and Periwinkle. Our soil is stiffish white loam on limestone, very untractable in most weathers, and much against rapid growths.—A NEW SUBSCRIBER."

[Mr. Ferguson is a first-rate authority on this subject. Our own experience does not furnish another example of the Silver Fir making up neglected ornamental plantations; still, if we had to deal in the matter, we would not hesitate an hour on following his advice. Recollect, however, that he is a thorough practical gardener; that such men do things very differently from amateurs; that any of that race would make your belt look as green and as full of underwood as any in the kingdom in one month, and insure it for the next year, provided he had the run of a long purse; all would depend on the banker. The way he would set about it would be to dig the whole surface of the belt from side to side, and destroy the whole felt of surface-roots, as a preliminary step; then he would, probably, thin out many of the worst and the closest together of the old trees, say fully one-third of the number. Their places he would trench two feet deep, and as wide as the large roots of other trees would allow of. Two out of every three of such trenched spaces Mr. Ferguson would fill up with Silver Firs from three to four feet high; the other third with Yews and Hollies of the same height. The intermediate dug ground the practical would plant with young Common and Portugal Laurels and Box. These three will grow under drip, and in the shade as well and much faster than in open places; but they must be under good management for the first seven years. The ground should be kept as clean and as free from weeds as a piece of rough shrubbery. Round the outside, next the drive, *Berberis aquifolia* would be a carpet the whole way, with Portugal Laurels twenty feet apart, or forty feet, and *Alaternus* between. The latter will grow in "brick earth," and in sheer chalk we have had it do so.]

TO CORRESPONDENTS.

LICE ON SQUIRRELS (*A Subscriber*).—Try rubbing flowers of sulphur among the fur.

COTTAGE GARDEN SOCIETY (*Salterton*).—Consult the Rev. Abner Brown, of Pytchley, Northamptonshire. His village Society was admirably conducted, and signally successful. He published a little pamphlet upon the subject.

PEAS AND OTHER CROPS FAILING (*J. Evergreen*).—The staple of your soil is too light, or, in other words, contains an excess of sand (siliceous). The best of permanent remedies would be the addition of

abundance of clay and chalk. Temporary remedies are mulching over the roots of your crops, and making trenches by their side, to be filled with house sewage occasionally. This would prevent Cabbages clubbing, and Parsley bolting, and most of the other gardening ills of which you complain. *Bletia Tunkervillia* is a synonyme of *Phaius grandifolius*.

VARIOUS (Cynthia).—For your east wall *Thompson's Pear* will do. Of *Strawberries*, the best for preserving, and for ice creams, are the *Old Pine* and the *Roseberry*. The art of *spinning sugar* may be learned of Mr. Gunter, Lowndes Street, Lowndes Square.

PEREGRINE (S. H.).—If you can call at our Office you will obtain the information you need.

NAMES OF PLANTS (A Lover of Ferns).—1. *Asplenium bulbiferum*. 2. *Davallia Canariensis*. 3. *Drynaria pustulata*. 4. *Cystopteris fragile*. 5. *Anemidietyon*, or *Anemia fraxinifolia*. 6. *Polypodium effusum*. 7. *Lycopodium cuspidatum*.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

BIRMINGHAM. December 2nd, 3rd, 4th, and 5th. *Sec.*, J. Morgan, jun., Esq. Entries close November 1st.

CRYSTAL PALACE. January 10th, 12th, 13th, and 14th. Grand Exhibition of Poultry, Pigeons, and Rabbits. *Secretary to the Poultry Exhibition*, William Houghton, Esq., Crystal Palace. Entries close December 13th.

ESSEX. At Colchester, December 31st, 1856, and 1st, 2nd, and 3rd of January, 1857. *Secs.*, G. E. Attwood and W. A. Warwick. Entries close December 17th.

GLOUCESTERSHIRE. Nov. 26th and 27th. *Sec.*, E. Trinder, Esq., Cirencester. Entries close Nov. 1st.

NOTTINGHAMSHIRE. At Southwell, December 17th and 18th, 1856. *Sec.*, Richard Hawksley, jun. Entries close November 19th.

NOTTINGHAM CENTRAL POULTRY ASSOCIATION. January 13, 14, and 15. *Hon. Sec.* Frank Bottom. *Secretary to the Canary Department*, Jno. Hetherington, jun., Sneinton.

PRESTON AND NORTH LANCASHIRE. January 21st and 22nd, 1857. *Sec.*, Ralph Leigh, Esq., 125, Church Street, Preston. Entries close December 13th.

N.B.—*Secretaries will oblige us by sending early copies of their lists.*

THE COMING EXHIBITIONS.

THE accumulation of important Shows for the month of January proves that all parties are arriving at a knowledge of the time most advantageous, in many respects, for holding them. The birds are then in the best feather and the best health; they are, consequently, well able to support the fatigue of travelling, &c. Their moulting is well over, their breeding-time is not come on, and in many kinds the chickens, arrived at maturity both of size and plumage, show to greater advantage than at any other period of their lives. One reason why there are so many Shows in January is, that December, by common consent, belongs to Birmingham, and if they continue as they have begun, Colchester and Preston will have their allotted periods. The Crystal Palace Company is now on the lists, having advertised an Exhibition for the 10th and following days. They have issued a liberal prize-list, and, as we believe, they purpose, if tolerably well supported by the public, to have two Shows annually: we hope both entries and attendance will be numerous. We cordially give our adhesion to one of their rules, which merely stipulates that the birds shall be the *bona fide* property of the exhibitors, without mention of any period. This is an improvement; and it is one of the Birmingham rules, also, for this year. The old rule was always evaded even by the most scrupulous. Fowls fell ill or moulted badly, and others were bought to replace them. In some cases they were borrowed, which was a great infringement. The object sought to be obtained was, that people should not, by purchasing expensive birds, beat those who bred; but it has long been known that it is almost impossible at any price to buy a pen of birds that is sure of success at a large Show.

If report speaks true, we are to see at Birmingham Cochins as they were in 1852, Spanish such as were never before seen, and Dorkings in perfection.

A few years since and pieces of plate were not dreamed of; now we hear of schemes for 1857, where even the smallest prizes shall be silver, and cups for collections worth £30 each. We have no doubt these will be carried out, and we congratulate beforehand the owners of good birds on the treats in store. Let not, however, the future make us unmindful of the present, and, by a full attendance at Birmingham, let us prove to committees that their exertions are appreciated and acknowledged by amateurs.

INFLUENCING COLOUR.—AGE OF EGGS FOR SITTING.

I CAN fully corroborate the testimony of "CHANTICLEER" as to the great influence the male bird possesses in the production of the colour of the chickens. I have tried the experiment several times, and the chicks almost uniformly follow the colour of the male bird. I have matched Gold Poland cocks with Silver hens, and *vice versa*; also White Poland cocks with pure Black hens, and pure Black cocks with pure White hens. Also, I have matched the Gold and Silver Sebrights together, and the young ones, with scarcely a single exception, have taken the colour of the cock bird.

I tried one cross last summer, which had a totally opposite result. I coupled a White-crested Black cock with three hens, and, although I hatched a great many chickens from them, there was not a single White-crested Black one. They were generally either all Black or White.

I also made several experiments as to how long eggs may be kept for hatching purposes, and I find that, although some of them will hatch when kept six weeks before being placed under the hen, yet a month is the greatest age at which you may rely upon for the eggs producing strong chickens, and plenty of them.

My experience with Toulouse Geese excels that of your correspondent, the Rev. W. Mousley, for from two geese, about ten months old when they commenced laying, we have had sixty-four young ones reared.

I have a Polish pullet, which is a near approach to the Black-crested White. She is a very light grey on the body, with a white tail, and a full, well-formed black crest. Although this is not the bird which is so much wanted, yet she is the nearest approach to it which I have yet seen, and is a very handsome fowl.—GEORGE BOOTHBY, *Louth*.

FACTS INJURING OUR POULTRY EXHIBITIONS.

OUR Poultry Exhibitions afford much interest, instruction, and actual benefit wherever they have been fairly established, and also judgmatically carried out. As with all other institutions, however, their efficiency, perpetuity, and general advantage depend exclusively on "the management" displayed by the superintending committees; whilst not the shadow of a doubt rests upon our minds that the final results are influenced far more by *preconcerted* measures than by the actual fulfilment, by each committee-man, of his respective duties during the period the Exhibition is opened for public inspection. It is quite as obvious that the interests of all such meetings are identical, and that success is only attainable by the adoption of measures very closely assimilating in all such cases. The following are necessarily indispensable; for it is only by the combination of these circumstances that present success can be hoped for, or anticipations of future meetings indulged.

First, then, there must be an extensive collection of *good* poultry, or the interest of the public will not be excited; and secondly, if the interest is not produced, the "entrance-money" will certainly not pay the compulsory expenses of the Show, and necessarily the losses to its projectors will be not only considerable in amount, but also inevitable.

Our intention, on the present occasion, is not to enter into any detail on minute matters, that, in the aggregate, no doubt, do tell most impressively on the eventual receipts, but to point out simply a few of the major points that influence, for good or for evil, the balance-sheets of the society.

A first-rate entrance, and of first-class birds too, is now everywhere attainable where the prize-list is a liberal one, and rectitude is betokened in the engagements entered into by the committee; for in these days good birds form rather the majority than otherwise of those Shows that can boast of such an inducement as plate or high cash premiums. Strong competition is the invariable result; indeed, we could not, in our extended experience, point out even a single failure. This desirable feature once attained, a good attendance of poultry amateurs and the public generally is fully assured; whilst, as the sequence, the admission-monies are influenced in exact proportion. These indispensable characteristics all committee-men have at their own dis-

posal, as to their individual Exhibition, if their interests are not unduly intruded upon by the meetings of like societies elsewhere; and this at once leads us to the most important point we desire to place before our readers.

It really almost appears, at the present moment, as though the committees of these truly popular sources of amusement were labouring under the potency of the *charm* that attaches to the old axiom, "a long pull, a strong pull, and a pull altogether." Its truth properly applied we do not hesitate to endorse, always providing, however, that in headlong recklessness of consequences the combined force does not prove so uncontrollable as to produce the very opposite of the results anticipated. From, perchance, the fact of an universal holiday-time, or, again, simply from sheer inattention, many of our Poultry Shows are fixed for times so closely approximating, or, indeed, in various instances, actually simultaneously, that the coveted results we have just alluded to cannot by any possibility prove the result everywhere. The show-poultry are not ubiquitous; efficient judges to award the premiums are not ubiquitous; and the poultry amateurs are not ubiquitous. The latter forms one of the most conclusive demonstrations of the glaring impolicy of this procedure; for there are not a few amateurs—real ones—who actually, in all cases, travel with their poultry, and return with them after the conclusion of the Exhibition. In proof of this we have met with twenty individuals at one hotel, and they were mostly competitors; and yet far greater numbers visit these meetings rather to see the position of certain well-known poultry-stock, and their relative "condition," than from personal motives or pecuniary interests. Where Shows occur at one and the same date, or without giving sufficient time for the birds to recover from the excitement, all such constant visitors are, at the best, divided, or their attendance frustrated altogether. The after-result is naturally a deficiency (from such parties alone) of some score or more of pounds in the receipts, whilst the general defalcation from the loss of interest, owing to absence of competition, and the consequent falling off of admissions to visitors who attend from curiosity alone, we will not even attempt to conjecture.

Facts prove, beyond doubt, that this ill-advised plan of permitting interests to be divided has been the stumbling-block, and oftentimes the actual ruin, of not a few of these societies. "The divided crust will not find provision for a multitude," but still might be more than amply sufficient if allowed to remain intact.

It was only last year that very particular attention was directed to the same "*mistake*" (as to Windsor and Yeovil Shows) in the columns of this periodical; and we beforehand unhesitatingly advanced our convictions of the inevitable result, viz., injury to both parties, and most probably the irreparable ruin of the weaker society. The difficulties prognosticated proved but too true, and the loss to both societies was most serious.

Let a few of our acting committees peruse with carefulness the rapidly successive dates of our speedily approaching Poultry Shows, considering whether all their interests will not be undoubtedly compromised by the plans *now* existing; and then reflect how all and each might benefit by a more extended period of time being allotted between them, so that *each* might enjoy the manifold advantages of undiminished receipts for the time being, and that, too, adding much to their prospects of success at future meetings.

BIRMINGHAM CATTLE AND POULTRY SHOW.

THE Cattle Classes will show a considerable increase as compared with last year; and one of the principal breeds, the Devons, will, probably, be better represented than on any former occasion—the Smithfield Club, when the two great Shows have been held together, having hitherto received the support of the majority of the breeders of this stock. The entries of Pigs are also considerably more numerous than they were last year; and in the two classes for young pigs—which have always attracted so much attention, and the useful character of which is universally acknowledged—there will be a very fine display. The collection of Roots will not be equal in the number staged to that of last year; but the season having been more

favourable, we may expect a higher standard of excellence in the specimens sent for competition. The change in the regulations with regard to the condition on which entries can be made by subscribers, and the delay in issuing the lists and regulations, have produced some effect in limiting the number of entries of Poultry, the total number this year being 1,210 pens, against 1,607 in 1855; and of Pigeons, 205, against 201 in last year. At the same time, there is every reason for believing that the Show will contain a large number of specimens of very great beauty, all the leading amateurs in the kingdom having entered the lists; and the finest birds, wherever they are to be found, will be collected together in Bingley Hall. In the other parts of the Exhibition there will, as usual, be much to interest not only all who are connected with agriculture, but the public at large; and from present appearances we may hope for an agreeable and successful meeting.

The experiment of last year for the sale of tickets for the Working Classes having been in all respects most successful, the Council have very wisely determined to extend the scheme, and to issue these tickets not only for Wednesday afternoon, but for the whole of Friday also. When confined to a single afternoon last year, upwards of 8,000 persons availed themselves of the privilege; and a very orderly and well-conducted company they were. Mr. John Lowe, of the firm of Mapplebeck and Lowe, has again courteously undertaken the management of this part of the business relating to the Exhibition; and manufacturers and others who may be disposed to give their workmen and women a winter "treat," and one that would, as is shown by what took place last year, be highly appreciated by a great number of persons, will do well to apply to that gentleman at once. On the former occasion to which we are referring, these tickets were principally applied for by residents of this town and neighbourhood; but there is no reason why the workmen of the South Staffordshire and Worcestershire districts, of the Potteries, Coventry, &c., should not have the opportunity of witnessing an Exhibition which, in its complete character, is unequalled.

It will be recollected that, at the general meeting of members in December last, a resolution was passed referring to the Council the consideration of the question of discontinuing the annual dinner, and the latter body have approved the suggestion, and no public dinner will take place. At the same time, it does not appear that the Council have at present made any arrangements for the delivery of lectures on agricultural subjects during the Show week, as was also contemplated by the resolution, and which, it was considered, would prove both attractive and useful.

We subjoin a table showing the entries from year to year since the establishment of the Birmingham Exhibitions:—

	1849.	1850.	1851.	1852.	1853.	1854.	1855.	1856.
Cattle	81	117	138	127	129	119	88	109
Sheep	40	55	71	83	59	61	64	46
Pigs	221	173	105	93	113	56	63	99
Total	342	345	314	303	301	236	215	254
Roots							142	119
Poultry	223	505	935	1,138	1,995	1,608	1,607	1,210
Pigeons	20	51	120	85	280	137	201	205
Total	243	556	1,055	1,223	2,275	1,745	1,808	1,415

—(Midland Counties Herald.)

GOLD-PENCILLED HAMBURGHES.

It really is quite refreshing to peruse the first three articles in your number for November 11th. They all dovetail so admirably into the experience of the fancy, and so good-humouredly point out matters of great import to those seeking information on poultry-breeding, that inasmuch as, in some back numbers, I grumbled at the paucity of replies to queries, and reflected on the selfish exclusiveness of those parties fortunate in their stock as *pure* birds, to afford to the anxious inquirer the smallest information regarding the required essentials, I now with much pleasure tender the *amende honorable*, and crave pardon.

The very thing which happened to your correspondent

respecting the state of his prize birds occurred to me, only that I *did* send mine, and placed but £2 on the pen. (*Vide* Bath and West of England Show, at Tiverton, Gold-spangled Hamburgs.) *I knew better all the while.* I knew they were not to be surpassed, and yet my judgment was set aside by a person as good a breeder as any man living of Cochins, and a decent judge of poultry generally. His *buts* and *ifs* did me. *I knew better all the while.* Men who have not made Hamburgs a study know no more about their quality than I do about my friend's Cochins, and when he gives an opinion about my pets again, should it be adverse to my own notions, *I shall know better all the while!*

And now for Mr. Brent's excellent paper on Gold-pencilled Hamburg Cocks. You have, Sir, hit the mark to a hair; no description could be truer than yours of the very bird that I sought information about; for "W. H." and "H. N." is the same individual. My Cochin friend came with his *ifs* and *buts*, and was as near as a *toucher doing me again.* I sent some feathers to the office of this periodical, viz., *hackle, bars, and breast.* I suppose they were not happily placed. Hence the reply, "The breast feathers are not spangled," as the Letter Box affirms; they are black at the edges (not moons), and when *in situ* form a variegated mass of feathers, evidently in a six-months-old bird, tapering down to strong pencillings or shadings. And I have no doubt, by-and-by, to find this kind of breast the one coveted. It is quite superb, and very far removed from a spangle. As to his tail, it is of a most exquisite colour; the feathers mostly are black, with specks of green and purple thickly dotted over them, becoming more defined, golden, and striated at the edges. The sickle feathers have not grown in proportion to the others, the bird being, from the first, weakly, so that I can only say they evidence stronger markings at the edges than the rest of the tail. He is of the most intense colour I ever saw. Some birds arrive at perfection much slower than others; indeed, I have generally seen the most precocious in all breeds oftentimes the very worst. My opinion was so divided in regard to the very points Mr. Brent has cleared up, that, *although knowing better all the while,* this valuable bird was put up amongst the doomed; and, having to forward a bird to a person in Somerset for a match, I inclosed the suspicious one for his inspection, by way of making up a basket. The reply I received was, "Why the deuce didn't you show the bird?"

I shall hope to rest my faith on Mr. Brent's experience, calling the little I possess into requisition; and as I can boast of breeding, with painstaking perseverance, all the Hamburgs (*Black included*), of *prize-taking quality*, it is never too late to take the advice of so good a man as Mr. B., and confess for the nonce that *I didn't know better.*"

I should look to Gloucester in the Spangled class if they were not so foolishly placed, viz., Gold and Silver, old and young. It is a lottery, and will, of course, deter many from showing.

I see something asked about poison from toads. I saw an abraded cuticle last week, which had been passed over by a water newt, and it assumed the appearance of the most obstinate poisoned wound I ever saw. The exudation from a toad may be, under certain circumstances, very like it.—W. H., *Exeter.*

ANERLEY PRIZES NOT PAID.

I SAW, with some little surprise, a statement in THE COTTAGE GARDENER, that all the Anerley prizes had been paid with one exception, as I knew that at that time several friends who had obtained prizes, together with myself, had not. I believe I won five prizes, amounting to nine pounds; not one farthing have I received. A month or so back I wrote to the Secretary for the amount of my prizes, when, instead of sending me a cheque, he coolly asks for a subscription towards defraying the expenses of the Show, having previously subscribed. If this is the way exhibitors are to be treated, Poultry Shows will soon be numbered with the things that have been.—GRENVILLE F. HODSON, *North Petherton.*

[We have a similar complaint from J. K. Fowler, Esq., Prebendal Farm, Aylesbury. He has received his Silver Cup, but not his money prizes. Also from John R. Rod-

bard, Esq., Aldwick Court, Langford, near Bristol, he having neither received his prizes nor medal. Why do not those who have been thus wronged sue some member of the Committee?—ED. C. G.]

WATTLED PIGEONS.

(Continued from page 70.)

CLASS No. 1, VARIETY 4.—THE ENGLISH CARRIER
(*Columba tabellaria Britanniarum*).



THE English Carrier Pigeon is often designated among fanciers "the King of Pigeons;" and, from its noble bearing, its power of flight, and its sagacity, well deserves the title. It is also rather larger than the general run of Pigeons. Most writers consider them as descendants from the Persian or Turkish variety, and it is most probable that such is their origin; but their form is much altered from those birds, and I believe it is owing to an admixture with the Egyptian variety, known as Bagdads, Great Scandaroons, or Great Horsemen, and from which cross they, in all probability, obtain the long beak considered so great a point in this breed, while the true Turkish or Persian is not remarkable for the length of this member; that the Turkish and Egyptian varieties have been much confused; and that from their mixture, with careful breeding, this breed has been produced, there can, I think, be little doubt.

The English Carrier, as it now is, is pre-eminently a bird of the fancy; and, to produce a good bird, it must answer to numerous points and properties demanded by them, of which the following are some of the most generally acknowledged:—The *beak* must be long, straight, and thick. If the beak is bent or hooked, or is run out into a thin, spindly point of horn, it is reckoned a blemish. "The *wattle*," says Mr. Moore, "ought to be broad across the beak, short from the head towards the apex or point of the bill, and tilting forwards from the head; for otherwise it is said to be peg-wattled, which is much disesteemed." The *eye*.—The irides of the eyes should be of a bright orange-red or fiery-gravel colour; the cere round the eyes ought to be broad, round, and of equal width, which is a great point, and is termed *rose-eyed*. If uneven, the eye as if it were not placed in the centre of the cere, it is then called *pinch-eyed*, and is a great fault. The *head* must be long, narrow, and flat at the top, having a slight depression

or groove in the centre. If the head is rounded in form it is termed barrel-headed, which is, likewise, a great fault. The general form of the Carrier is also a point of great importance. The neck should be long, thin, and without bend; the shoulders wide; the wings strong; and the pinions long, which add greatly to symmetry of the body; the back should be rather hollow, for if it rises, it is termed hog-backed, which detracts from its beauty; the legs, too, are rather large and stout.

The English Carrier is, as I have before mentioned, the offspring of birds brought originally from Persia, Turkey, Arabia, and Egypt, which varied considerably; and, by careful breeding and attention to generally-accepted rules, it has been brought to a high standard, though I fear the birds of the present day are much smaller and more degenerate than they were some twenty years back, though, perhaps, they answer quite as well to the points of the fancy; yet they are not such noble and magnificent birds as their ancestors. Their genuine plumage is raven black, and the feathers set remarkably close to the body. These Blacks occasionally throw a Dun, which Duns are thought generally to have the best heads. Others, as Whites, Blues, and Pies, are sometimes to be met with, but are rarely so good, the White having almost always the great blemish of bull or black eyes.

Their great value consists in their sagacity, the attachment they bear to their home, and their capabilities of discovering it and returning to it from long distances, they being in possession of some sense or faculty of which we are ignorant, by which they are directed and impelled in a homeward course; and man, taking advantage of this property inherited by all Pigeons, but in a far higher degree by some kinds than others, has made use of them as carriers of intelligence from place to place; but it requires the Pigeons to be trained while young, and afterwards kept in exercise, or they become fat and idle, or their homing faculty becomes weakened from want of use. They are shy, rather unfriendly birds, and excellent breeders and nurses if kept in a natural state; but, if allowed to become too fat, they are less careful of their offspring.—B. P. BRENT.

LIVERPOOL POULTRY SHOW.—We have authority to state, there will be the usual Exhibition of Poultry in the early part of 1857 at Liverpool, and, in accordance with the spirit of the times in these matters, there will be numerous cups or pieces of plate offered for competition. From the liberal conduct on all occasions of the gentlemen who undertake the onerous duties of the committee, and the deserved popularity of this Show, our readers will thank us for giving the earliest information.

THE HOUSEHOLD.

PICKLED LEMONS.—Take a dozen bright-looking, juicy lemons, after grating the brown specks off from the outside, cut them down the middle from the top to the bottom, and across, fill them up with salt, and lay them in a dish to dry either in the sun or before the fire; then boil some vinegar with garlic, shallots, horse-radish, and pale turmeric, and pour this liquor on the lemons so as to cover them well. When the vinegar has penetrated the lemons so as to make them tender, which will be in two or three months, they will be fit for use.

REGENT PUDDING.—Five eggs, well beaten, and one pint of cream mixed together, and strained into a basin that has been well buttered; tie a cloth over the edge of it, and boil slowly for half an hour; then turn it into a deep dish with sauce as follows:—Two glasses of white wine, the juice and rind of a lemon, cut very thin like threads, a quarter of a pound of lump sugar; boil this to a syrup, and pour it round the pudding, not over it, as it will discolour it, and may break it.

MINCE MEAT.—Take one pound and a half of beef after it is boiled very tender, pick all the skin from it, and chop it very fine; three pounds of suet, three pounds of currants, two pounds of raisins, and three pounds of apples, chopped very fine; one pound of moist sugar; the juice of three

lemons, and the peel of two grated; cinnamon, cloves, nutmeg, and mace, to taste; one pint of white wine, half a pint of port, and half a pint of brandy. It must be kept in a dry place.

OUR LETTER BOX.

CRYSTAL PALACE POULTRY SHOW.—"Pray remonstrate with the Directors of the Crystal Palace for fixing their Poultry Show on the same day as the Colchester, and also for having it on a Saturday, and for four days after. This necessitates the birds being from home on a Sunday, and is too long to be remunerative. It ought to be on the Wednesday in the next week, and close on the Friday; it would then answer well. If it be postponed for a week, say till the following Saturday, it will clash with the Preston Meeting, which will be quite a first-rate affair. A line or hint from your pen, and a few more such remarks from other exhibitors, would, perhaps, have the effect of altering this.—JOHN K. FOWLER, *Prebendal Farm, Aylesbury.*"

[We have corresponded with the authorities upon the subject of their Show clashing with others, but there are reasons for not altering their days of meeting. Saturday is the aristocratic day, and those who pay half-a-crown are considered entitled to the first sight. We have done battle without effect against Shows of many days. If exhibitors submit to send their birds, we are powerless to prevent it. If there is any place where the birds will be little inconvenienced by long confinement it is the Crystal Palace.]

GOLDEN-SPANGLED HAMBURGHS FOR EXHIBITION.—"A lady, who intends to exhibit a pen of 'Golden-spangled Hamburg chickens of 1856' at the next Poultry Show at Birmingham, has requested me to decide upon the merits of two Hamburg cockerels. They are of the same hatch, and of first-rate (Yorkshire) strain; but No. 1 is much smaller than the other, and his comb is not so well developed at present. In other respects he is a handsome bird, and has perfectly white earlobes. No. 2 is a remarkably handsome bird, and his comb is beautifully pike-shaped, but his earlobes are only partially white. As they are rather whiter than they were a month ago, possibly they may be perfectly white when full-grown. In the meantime, will this imperfection deprive him of all chance of a prize at the Poultry Show? and do you recommend the lady to send No. 1 in his stead?—AN OLD SUBSCRIBER."

[No point is more imperative than the white ear-lobe in a Pencilled Hamburg fowl. The fact of your first cock being too small to have a well-developed comb would seem to say he was too small to hope for success in the teeth of such competition as there will be at Birmingham. On the other hand, the second bird would not stand well unless he has a white ear-lobe. One may grow, and the other may whiten in the course of the next fortnight. It is difficult to advise you; but, seeing the importance of the ear-lobe, we should go for the first if his other points are good. You will do well to recollect all does not depend on the cock; the pullets should also be perfect.]

INDIAN CORN FOR FOWLS.—"We have many fowls, chiefly Dorkings, and have had very bad success with sitting this last summer. Our food consisted chiefly of Indian corn. Do you think that the food has anything to do with the unproductiveness of the poultry?—A SUBSCRIBER."

[Indian corn is bad food for poultry. It is not injurious if mixed with oatmeal or barley meal, but by itself it is the worst food you can give. You will never do any good with your fowls on it. Substitute barley meal or oatmeal, and you will find a speedy improvement.]

HOWTOWDY.—"One of your correspondents desires to know what a *Howtowdy* is. The following explanation is from Jamieson's Scottish Dictionary:—"Howtowdy.—A young hen. One that has never laid. This is evidently from the French *Hestaudeau*, *Hustaudeau*, *Hutaudeau*. A great cock chick, and sometimes any big or well-grown pullet." [Jamieson.] I do not find this in any modern French Dictionary, or in the *Dictionnaire de l'Academie*; but it is in the quarto edition of the *Dictionnaire Francais*, par Laveaux.—H. M., *Herts.*"

LONDON MARKETS.—NOVEMBER 24TH.

COVENT GARDEN.

Supply moderate, and a fair amount of business doing for the season. The usual descriptions of Continental supplies have come to hand; but the *Dutch Hambro' Grapes* are not near so good, owing to the moist weather of the last few days. The shipments will probably conclude on Monday next. *Hothouse Grapes* are in excellent condition, both *Muscat* and *Black Hambro'*. *Potato* trade better, and prices slightly advanced.

POULTRY.

The only alteration we have to notice this week is the influx of large quantities of game, much more than there is any real demand for.

Large Fowls 4s. 6d. to 5s. 6d. each.	Hares 2s. 6d. to 2s. 9d. each.
Smaller do 3s. 6d. to 4s. 0d. "	Ducks 3s. 0d. to 0s. 0d. "
Chickens .. 2s. 0d. to 2s. 6d. "	Geese 6s. 6d. to 8s. 0d. "
Grouse 1s. 9d. to 2s. 0d. "	Rabbits 1s. 4d. to 1s. 5d. "
Partridges.. 2s. 0d. to 2s. 3d. "	Wild ditto 10d. to 1s. "
Pheasants .. 2s. 6d. to 2s. 9d. "	Turkeys.. 7s. 0d. to 10s. 0d. "
Pigeons..... 8d. to 9d.	

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WEEKLY CALENDAR.

D M	D W	DECEMBER 2—8, 1856.	WEATHER NEAR LONDON IN 1855.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
2	TU	Bembidium poccillum.	29.879—29.811	44—26	N.	04	48 a. 7	52 a. 3	8 13	5	10 13	337
3	W	Bembidium propergens.	29.988—29.983	40—31	N.E.	02	49	51	9 38	6	9 49	338
4	TH	Colymbetes fuliginosus.	29.828—29.525	47—36	S.W.	01	51	51	11 3	7	9 24	339
5	F	Opilus mollis.	29.557—29.509	44—30	W.	00	52	50	morn.	8	8 59	340
6	S	Phosphuga atrata.	29.504—29.373	42—28	N.W.	00	53	50	0 28	9	8 34	341
7	SUN	2 SUNDAY IN ADVENT.	29.580—29.480	42—27	N.	00	54	50	1 52	10	8 8	342
8	M	Scaphidium quatuor maculatum.	29.841—29.562	35—19	N.E.	00	55	49	3 19	11	7 41	343

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 44.0°, and 32.7°, respectively. The greatest heat, 58°, occurred on the 8th, in 1843; and the lowest cold, 14°, on the 5th, in 1844. During the period 101 days were fine, and on 95 rain fell.

THE November Meeting of the Entomological Society was held on the 3rd instant at the Society's Rooms, W. Wilson Saunders, Esq., F.R.S., Treas. H.S., &c., President, in the chair.

After the donations of books had been announced Mr. Augustus Shepherd exhibited some rare species of Moths recently captured near Brighton, including *Acronycta alni* and *Phibalapteryx gemmaria*.

Mr. Foxcroft exhibited a number of the rare species which he had captured during his visit to Scotland in the summer, which were intended for distribution among his subscribers; and Mr. Stainton exhibited the following rare Moths taken by Mr. H. Cooke near Brighton:—*Phlogophora empyrea*, *Leucania vitellina* and *musculosa*, *Laphygma exigua*, and *Cucullia verbasci*; also the rare Beetle, *Uleiota planata*, hitherto regarded as a doubtful native, but which had been now proved to be indigenous, by having been taken beneath the loose bark of a Lime-tree. Mr. Stainton also read a note from Herr Dohra, President of the Stettin Society, giving an account of the capture of the three species of the singular blind Beetles, belonging to the genus *Leptoderus*, in the caverns of Carniola, where so many blind insects and other animals, including the *Proteus anguinos*, were found. Specimens of these three insects, and of another curious blind Beetle from the same caverns, were now to be obtained for £3.

Mr. Stainton exhibited a beautiful open net-work cocoon of an unknown Lepidopterous insect recently received from China. It was further remarkable for being attached at the extremity of a long, slender foot-stalk. Mr. Westwood stated that the cocoons of the Indian Silk Moth, *Saturnia Mylitta*, were attached by a still longer foot-stalk to the twigs of the trees on which the caterpillars fed.

Mr. Samuel Stevens exhibited a specimen of the Chinese Wax Insect on the twig, recently received from Mr. Fortune; and Mr. Bowring stated that the natives were in the habit of employing this insect-wax for the purpose of coating their tallow candles, so as to give them a hard surface. Mr. S. Stevens also exhibited the larvæ of the rare *Noctua Ashworthii*, and also the larvæ of a small Lepidopterous insect, which still continued its attacks upon the bottle of liquorice-powder exhibited at a former meeting of the Society.

Mr. Bowring exhibited a singular monstrosity occurring in a specimen of the Chinese Water Beetle, *Cybister limbatus*, in which, although arrived at the perfect state,

the insect still retained the head of the larva; and Mr. Westwood stated that a similar circumstance had occurred in a specimen of the Butterfly, *Nymphalis populi*, as described and figured by M. Wesmael, of Brussels.

Mr. Adams exhibited specimens of the rare Beetle, *Polystichus fasciolatus*, *Trechus nanus*, and *Drypta emarginata*, together with a larva considered as that of the last-named species.

Mr. Gregson exhibited specimens of the little Moth, *Coleophora vitisella*, and the case formed by its larva. Mr. Stevens communicated a letter from Mr. Wallace, dated at Lambok, an island near to Borneo, in which the insects were so scarce that, during two months' residence, he had only captured eighty species of Beetles.

A note from Mr. Thwaites, of the Botanic Gardens, Paradenia, in Ceylon, was read, giving an account of the manœuvres of a species of Spider in capturing its prey, which it gradually encircles with its web. Mr. Marshall mentioned the capture of eight specimens of *Pieris Daphidice* near Glasgow; and the Secretary announced that a new part of the Society's Transactions was ready for distribution among the members.

LONDON HORTICULTURAL SOCIETY'S
MEETING.—Nov. 25TH.

THIS was the first General Meeting of the Society under the new Council; and if envy was allowable, they, the new Council, might well be envied for their immediate success, seeing that a long course of bad management had brought the affairs of the Society to a dead lock. There were thirty-four new Fellows admitted by ballot at this meeting, and two more who wished to become F.H.S. were too late till the next batch. There was a meeting in October to elect officers for the ensuing year, at which a batch of seventeen new Fellows were made; in all, fifty-three new Fellows in one quarter, and that the dullest in London of the whole year. There never was a larger or a more practical meeting of the Society in my time than this one of which I am about to report the doings.

J. Blandy, Esq., was in the chair, supported on the right by Dr. Royle, and on the left by Dr. Lindley; but to find chairs or benches for one half of the meeting was out of the question; standing-room and packing and squeezing were the order of proceeding when the chair was taken at 2 P.M.

There was a tremendous competition in Black and White Grapes, without a single bad bunch of any kind. Pine Apples were uniformly good, and never more uniformly in size and weight. There were about a score of them. Pears, with few exceptions, were not nearly as large as I have seen some of the same kinds here on

former occasions; and a great number of unripe Pears were sent by the friends of progress to help to "make up." Apples were never seen here in better condition, as far as I recollect. Oranges and Citrons of home growth were good-looking, but not numerous; and, in addition, we had *American Cranberries* in fine style, and in two ways of dishing them for the dessert. The smaller dark purple and the large yellow *Guavas*, and the newest of all our good fruit, that of *Eugenia Ugni*, together with one dish of *Strawberries*, one of *Red Currants*, and one or two of *Raspberries*; and, to finish this "course," we had plenty of *boiled Beet*, cut up through the middle, which is the right way to exhibit that vegetable for competition; then one sees into the very heart of the thing. A uniform deep purple or plum colour, without veins, and mild to the palate, is allowed to be the perfection of first-rate Beet; but the last qualification depends so much on the cook that I would never insist on it.

Then we had heaps of the new *China Yam*; *Pear-trees* worked on *Quince* stocks, with *Palms*, *Ferns*, and *Lycopods*, to dress the dessert-tables, and a few collections of plants in bloom; *Orchids* and other stove plants, *Pomponé Chrysanthemums*, and some few new plants, the best of which, and really the very best plant that has been introduced for the last ten years, was a new hardy *Coltsfoot* from Java, from Mr. Glendinning.

But let us understand each other, and have no bother about the "best plant." First of all, can you tell us decidedly which of these two was the best for this country, the *Cedar of Lebanon* or the common *China Rose*? According to your own decision, therefore, will I allow your judgment between *Wellingtonia gigantea* and this new *Coltsfoot* from Java or Japan.

Everybody seemed in good spirits at the success of the new Council, and I heard no complaints; but I know there was a little disappointment in one instance, which I can explain. There was one collection of plants in another room which escaped a passing notice in the lecture; but I know personally that Dr. Lindley took an interest in that very collection; for there was one particular plant in it—a new *Cynoches*—which I did not know, and I applied to the Doctor about it. We both examined it together, and he told me it was also new to him, and he seemed to take a good deal of interest in the whole collection; therefore there need be no misgivings about any intentional neglect.

Another exhibition of fruit supplied just twelve times more than was required by the schedule through misreading the rule on that head. The rule said, "For table Pears of home growth in twelves," and Apples the same. Now, did that mean twelve Pears of a kind, or twelve Pears in all? It reads both ways, and was, therefore, not sufficiently explicit. What was meant was twelve kinds, and, to make sure of the mark, this exhibitor produced twelve kinds, and twelve Pears and twelve Apples of each kind, whereas one, or at least two, of each kind would have answered the purpose. This same kind of puzzle was in the schedule of the Crystal Palace Show for last June, and the error was mentioned to me at the time as a grievance, in the hope that I should draw attention to it, which escaped my notice to do at the time. All the practicals apply to me on such occasions, on the understanding that THE COTTAGE GARDENER is perfectly independent, and can therefore speak out without fear of consequences; but, even with this safety-valve, we have had too much pressure on the engine at times.

The first prize of £5, offered by Dr. Lindley for the best collection of fruit of home growth, was carried off by Mr. Tilyard, gardener to the Right Hon. the Speaker; and the second prize, which was offered by C. W. Dilke, Esq., was won by Mr. Ingram, of the Royal Gardens, Windsor. Mr. Tilyard exhibited thus: five *Pines* across

the top, two on the right and two on the left, with a dish of *Cranberries* on the stalks or shoots; between each pair and the centre Pine two dishes of *Black Hamburgs*, and three bunches in each; a large dish of *Cranberries* picked off the shoots, and lying like peas in a dish; in the centre, one dish of *Otaheite Oranges*, and seven dishes of *Pears*, and one dish of *Raspberries*, and one of *Red Currants*. This arrangement had a very excellent effect. The two match-dishes of *Cranberries*, on short pieces of the plant heaped up conically, will be new to many who pride themselves on the arrangement of the dessert-table, and every good gardener ought most certainly to be the sole manager of his own-grown fruit till it is so arranged.

Mr. Tilyard's Pears were—*Winter Nelis*, *Urbaniste*, *Délice d'Hardenpont* (t not sounded), *Passe Colmar*, *Beurré Diel*, *Ne Plus Meuris* (pronounced *Plue Muré*), and a pretty middle-sized Pear, in the way of *Glout Morceau*, for which the authorities could not furnish a name. Mr. Ingram's collection consisted of three *Pines*, a *Queen*, *Cayenne*, and a *Bahia*; two dishes of *Black Hamburg*, one of *Muscat of Alexandria*, three of *Pears*, three of *Apples*, three of *Oranges* and *Shad-docks*, one of *Guavas* (*Psidium pomiferum*?), like small Golden Pippin Apples. The Apples were *Court Pendu Plat*, one of our very best; *Blenheim Pippin*, and *Cox's Orange Pippin*. The Pears—*Ne Plus Meuris*, *Chaumontelle*, and *Glout Morceau*. Mr. Ingram exhibited a cock's-comb-shaped *Cayenne Pine*, with thirty-four little gills or suckers round the comb, and twenty or more inside—a most prolific progeny to increase from, if that kind of Pine was new or scarce; the weight was hard on ten pounds.

Mr. Solomons, of Covent Garden, took the first prize of £1 10s. for *foreign fruit*, such as is to be had now at Covent Garden, namely—*Chaumontelle*, *Beurré Diel*, *Duchesse d'Angoulême*, *Glout Morceau*, *Easter Beurré*, *Crassane*, *Vicar of Wakefield*, *Bonchrétien d'Hiver*, and another *Bonchrétien*, with *Belle d'Angers*, all noble-looking Pears. His Apples were the pretty little *American Lady Apple*, *Reinette du Canada*, and *Calville*.

Mr. Webber, of Covent Garden, sent fine *Glout Morceau*, *Beurré Diel*, and *Easter Beurré* Pears.

Mr. Hill, gardener to R. Sneyd, Esq., Keele Hall, Staffordshire, had the finest *Muscats of Alexandria* and *Black Hamburg* Grapes that were ever seen in this room. They were those of which Mr. Errington wrote at page 106. Mr. Errington's hand in these matters is like the hands of the electric clock opposite Hungerford Market, with which I square the hands of my own repeater every time I come near it, and, between the two, I have the best time and the best of the season.

I noted the following Grapes, *Black Hamburgs*, all in dishes of three bunches each, from Mr. Ingram, gardener to J. Blandy, Esq.; Mr. Frost, gardener, Preston Hall, Kent; Mr. Nash, Bishop Stortford; Mr. Gye, Wandsworth; Mr. Lancaster, Deptford; Mr. Povey, gardener to the Rev. J. Thorncroft, Thorncroft Hall, Congleton; Mr. Hull, gardener, Putney Heath; and Mr. Tilyard. *Muscats*, in three bunches, from the said Mr. Ingram, Mr. Povey, Mr. Glendinning, Ash Grove, Sevenoaks; Mr. Wortly, gardener to Mrs. Maubert, Norwood; Mr. Nash, Mr. Gye, Mr. Frost; and *Cannon Hall*, from Mr. Nash.

Pines, from Mr. Solomon, Pine-Apple Lodge, Peckham Rye—two *Ripley Queens*, and two *Black Jamaica*-looking *Pines* from suckers, said to be imported from Sierra Leone; three *Black Jamaicas* from Mr. Jones, the great Welsh grower.

Dessert Pears.—First, Mr. Snow, gardener to Earl de Grey; second, Mr. Ingram, of the Royal Gardens; and third, Mr. Tilyard. *Dessert Apples*.—First, Mr. Snow; second, Mr. Ingram; third, Mr. Munro, gardener to C.

Pearce, Esq., Russell Farm, Watford. For *Kitchen Apples*—Mr. Snow first, and Mr. Ingram second.

I did not hear nor see the rest of the prizes, but I have many names of high standing who competed; but I missed Mr. Fleming altogether, and that will never do now that the wheels are all oiled.

There were green and white *Asparagus*, *Syon House Cucumbers* from Mr. Tilyard, several kinds of *Beet* from Mr. Henderson, of Pine-Apple Place, of which *Henderson's Short-topped Beet* was decidedly the best.

Mr. Robinson, gardener to Lord Boston, was a large contributor. His *Otaheite Orange-trees* in full fruit, and a large dish of the same by their side, were in first-rate style for the dessert-table.

The gardeners of the Society furnished *Black Ham-burgh Grapes* from the glass wall, a fine *Guava* (*Psidium Cattleianum*) plant in fruit, and a dish of the fruit with it; also a plant in fruit and a dish of *Eugenia Ugni*, which was the best of the kind yet tasted; but, as no two writers can agree on the flavour of fruit, or on the value of colour in flowers, I shall merely say that this appeared to me as the flavour of an over-ripe Hautbois Strawberry, of which some people will get very fond as this new fruit becomes better known, and others will faint away at the very "smoky flavour." I know some ladies who can hardly sit at table when Muscat Grapes are handed round, and lords who must fly the country during the hay-making season. Others get headaches from the smell of Hyacinths; and once I confined a whole family to bed one morning by placing a *Hedychium Gardnerianum* in the front hall "the over-night," which brings me to the flowers at this Exhibition.

Beginning with a collection from the Wellington Road Nursery, consisting of different-sized pots, from No. 60 to No. 12, all filled in the cutting fashion with little plants of *Sonerila margaritacea* in bloom, to show how admirably such ornaments may be made for any part of the drawing-room, from the two corners of the mantle-piece to the two strongest stands in or between the windows, where they may be had in bloom all the winter by having a few "changes" in the stove. A large china vase or glass ornament might be filled first with silver sand, then watered, then the centre to be clear to the depth of four inches, that depth to be filled with finely-sifted leaf-mould, peat, and sand, then to plant this *Sonerila* from the cutting-pot as thick as they would stand, to water, and then to sprinkle sand on the top as for cuttings, and the whole would be as clean, gay, and elegant as anything the imagination can dream of—thanks to the inventors. *Liparis longipes*, the first ever exhibited, with long, arched, drooping spikes of Mignonette-looking blossoms, as closely set as they can stand, reminding one of the fairy-like tresses of *Dendrochilum filiforme*, but not quite so slender. *Achimenes Warszewiczii*, a cross between *picta* and some one from the section of *hirsutum*; and such an offspring has been raised to the dignity of a new genus, in order to "raise the wind" across the channel. *Exacum Zeylanicum*, a blue Melastomad, several *Ardisia crispa Sieboldi*; two *Palms*, a *Cordyline*, a *Cactus truncatus*, a standard, and cut blooms of seedlings of crossed *Bouvardias*.

From Mr. Woolly, gardener to H. B. Ker, Esq., the finest *Calanthe vestita* ever yet exhibited, with eight or nine strong flower-stems, the stems arching and falling down in front to show the whole mass of living beauty as you have seen the *Phalenopsis* do in May or June.

A collection of *Orchids* from the Messrs. Jackson, in which was one of the curious *Philodottas* I mentioned the other day; the *Bird-beak Oncid* ditto; the *Oncidium anguiculatum*, with its long-branched, slanting-upward flower-stems, and large yellow and brown flowers; a new *Cynoches*, with a drooping spike of pale blush, swan-neck-like blooms, all the way from Veragua; *Sophranitis*

grandiflora, and a tree-like *Lycopod*, with *Araucaria*-like leaves and shoots, and one of the *Lastræa* Ferns.

A branch of *Abies Cephalonica*, in fruit at last, from H. L. Long, Esq., Hampton Lodge, Farnham. It is a *Picea*, however, and the difference between the two was manifest in this cut branch. *Picea* never casts the seed-cones; *Abies* always does cast them off. The axil of the cones in *Picea* sits on the branch like the teeth of a rake after the cones drop off scale by scale.

A new species of *Justicia*, or *Adhatoda*, from Mr. Veitch, an excellent-looking plant to make a "specimen," with large flowers of two colours, a deep blue front lip, the top arch and outside pale violet; native country not named.

Two plants of a new Coltsfoot (*Tussilago*), from Mr. Glendinning, of the Chiswick Nursery, which will make a better trade-plant than any we have had for many years, and a better exhibition variegated plant than any of that class, except the *Sonerila* aforesaid, for the hall, vestibule, or corridor. It is the very best we have for winter, and for out of doors it would soon cover the nakedness of the land with its magnificent, large, green, shining leaves, which are blotched as freely as those of the Dumb-Cane; and, moreover, it is quite hardy.

Cut blooms of the lovely *Lapageria* from Mr. Veitch, and of the graceful blue *Vanda* from Mr. Mant, of Bristol, as usual, and two pretty alpine Orchids from R. Warner, Esq., Broomfield, near Chelmsford; namely, *Sophranitis grandiflora* and *Cattleya Walkeriana*, with a rosy flower, nearly as large as that of *Skinneri*, and in that style.

Two collections of *Pomponé Chrysanthemums*, which I shall notice next week, with all the gossip of the season about that fashionable tribe. Three *Pear-trees* from Mr. Rivers, to show the stunting effects of working such on the *Quince*. One of them killed the *Quince*, or left it to die of itself, by forming strong fang-like tap-roots of its own, and an excellent subject for a funeral oration at the end of the lecture. But there was a way and means of getting all kinds of Pears to do on the *Quince*, as far as doing was concerned, when I was a nurseryman on the hill of Kinoul, at Perth, and behind the Botanic in Edinburgh. In the former the "Carse gardeners would have the double-worked Pears in preference, and from the "heart of Mid-Lothian" they would think one daft to order Pears on free stocks for the kitchen-garden. All *Quince* stocks are there grafted first with the *Virgoloeuse Pear*, on which all sorts "took" the next year.

Last of all, and better than all, a real substitute for *Potatoes* in the new Yam from China, *Dioscorea batatas*. Some people think that your humble servant can "do" a new plant at a pretty considerable rate; but they should have heard that lecture, and have seen how the spirit of the thing moved the lecturer; then they would see the difference of attempting to "do," and the real doing as it should be done; in fact, I was compelled to stand stark still, and hear it all out like the rest of them; and no one will be so unreasonable as to think that I could get at all the prizes while I was riveted to the very boards by all this eloquence.

"The most perfect indifference" is shown by the new Yam to "the most rigorous seasons;" it is perfectly and most perfectly hardy. The evidence is most conclusive to prove that the bigger the "sets" or seed, the larger will the crop dig out. All potting, and all fiddling with it, is a perfect waste of time. Trench the ground as deep as for Parsnips, and put in spanking long Yams in the first week in March, and let them alone entirely for the rest of the season.

D. BEATON.

CUCUMBERS, THEIR FAILURES AND DISEASES.

THE statement of a case by "J. C. W.," alluded to in another page, seems to furnish a good opportunity for alluding to a number of inquiries on this vexed subject in one article.

I do not profess to be able to tell how to cure and conquer the various maladies to which the Cucumber race has lately been subject. I can only mention, as nearly as possible, the circumstances in which I have been troubled with disease, and other circumstances in which I have been next to completely free from it. I have had so often to dismount from a hobby-horse theory, which at the time seemed satisfactory enough, but was set adrift by future facts and experiments, that I should not like to say that in the circumstances referred to there were really cause and effect, being afraid that the future might show me there was merely a coincidence, the return of which was next to accidental. Whether, however, merely coincidence, or cause and consequence, there can be no harm done in mentioning some of the circumstances.

There is some difficulty in attempting to meet the complaints of the sufferers by Cucumber disease, merely because we are left in ignorance of the form in which it presents itself. There is the disease first attacking the roots in excrescences, as described by Mr. Bailey, of Nuneham, of which I have had little experience; there is the drying and shrivelling disease, so well described by Mr. Ayres in *The Gardeners' Chronicle* for 1855, page 741, and which I have frequently seen, though, in some few cases, it seemed to be the consequence of accident or neglect as much as of disease; there is the yellowing and rotting of young fruit at their points, refusing to keep healthy, or to swell and grow, though the foliage be healthy, which some call "the disease;" and lastly, for the present, there is the festering disease, in which a nasty, gummy matter exudes from fruit and stems, the most ugly and disagreeable of all the diseases. If one of our great men would only give a name to each of these diseases or forms of disease, if there would not be less difficulty, there would, at least, be less confusion.

Now, if the Cucumbers of our correspondent, "J. C. W.," have got the disease, it is the drying up and shrivelling manifestation of it. His Cucumber-house is everything that could be wished for, forty-five feet long, twelve feet wide, eight feet at back, three feet and a half at front, a hot-water tank along the centre, a pit over it, eighteen inches deep by four feet wide; plants grown to a single stem, and then trained to a trellis eleven inches from the glass; bottom-heat 75° to 80°, top-heat 65° to 70°, with a rise from sunshine, plenty of moisture in the atmosphere, air carefully given, some left on all night, and yet the margins of the leaves shrivel up as if scalded, and not merely on sunny days, but even in cloudy ones. I have not been so much troubled with this form of disease as with the gummy one, though I have seen enough of it to verify Mr. Ayres' description of it, namely, the plant first presents a flagging appearance, then the leaves present a speckled appearance, and then dry up, and shrivel round their margins.

I do not propose entering here into the vexed question whether this, and the gummy disease likewise, are constitutional, or merely induced by a particular state of the atmosphere, or encouraged by particular treatment, farther than to say that some modes of treatment are, to a certain extent, preventive, if not remedial; and, though once seeing much force in the constitutional theory, yet later proofs have led me to doubt its correctness, though common prudence would dictate the wisdom of propagating only from a healthy stock.

All who are particularly interested in this form of the disease should read the article of Mr. Ayres referred to

above. He places the chief blame on improper soil, in which I cannot agree farther than in reprobating with him the using of the same soil again and again for Cucumbers, while I thoroughly agree with him in recommending a limited space for root action—the use of well-aired, pure, fresh, fibry, turfy loam, with a little leaf-mould from deciduous trees, or very well-decomposed cowdung. If there would be any difference between us here, it would be shown in the season of the year, as, when I used to grow Cucumbers in full swing, my compost for winter used to be about equal portions of such loam, well aired after being heated, to drive out everything in the shape of worms, &c., and an equal portion of heath-mould, in which worms seldom show. In spring I used such loam, with sweet leaf-mould, well aired after being dried in a similar manner; and in summer I used similar loam, with a good allowance of well-aired, old cowdung. Such composts left nothing to be desired. I first learned the importance of limiting the root-space for Cucumbers when living under the instructions of Mr. McMurtrie, at Thugborough, the seat of the Earl of Lichfield, in Staffordshire. There was a house appropriated to Cucumbers, and its producing powers I have never seen exceeded. The Cucumbers did well enough in a wide bed grown in the usual way; but the wonderful results were obtained chiefly from narrow boxes and pots set on shelves, &c., and the Vines overhanging the pathway. When practising the same system on my own account, and as I deemed very successfully, my self-satisfaction was sobered down by seeing very fine crops at Chick-sands Priory grown in pots by the father of Mr. Ayres, and that must be about twenty years ago. Whenever it can be acted upon, then, I consider great success and freedom from disease to be alike promoted by limiting the space for root action, by using a fresh, sweet, and rather poor soil, and communicating strength by surface-dressings and manure-waterings. So much and so frequently have I top-dressed at times, that I have had nearly as much compost, in the long run, above the rim of the pot as below it. Cucumbers are not at all particular about having what is called their *collar* covered, and somewhat deeply, too, provided it is done gradually, and the first top-dressing contains a mass of roots before you add a second, and so on.

Our correspondent, and others presenting similar cases, may find in such remarks something that will suit them. When the leaves are spotted as well as shrivelled at the margins, watering with lime-water, as recommended by Mr. Ayres, will be found advantageous, especially when there is any organised matter in the compost. Syringing with the lime and sulphur so frequently referred to will also be useful. But in many cases, where the margins of the leaves are merely shrivelled, it is doubtful whether such appearances are so much the result of disease as of something amiss in our management. Our correspondent does not tell us what sort of a compost he used in his four-feet-wide bed. It might be none too rich for June, and yet be sadly too rich for November and December. The leaves might be too soft and gross from an excess of high feeding, while a deficiency of sunlight would prevent a corresponding fixation of carbon or solid matter, and therefore they would feel quickly sudden changes from shade to brightness, and from cold to heat, and from wet to dry; while leaves half the size, hard and firm to the touch, would pass such ordeals unscathed. Had I such a bed for such a wide house in winter, I would at least divide it longitudinally into two.

Again, nothing is said of the depth of the soil, and if there is any and what separation between it and the tank, though no roots ought to come within four or five inches of it if the surface-soil is to be kept at about 80°; neither are we told what attention is paid to seeing that

the rubble, &c., over the tank is always in a moist state. If these precautions are not attended to, the roots near the tank may at times be 40° or more, higher than those at the surface, and may be alternately par-boiled and scorched; and no wonder if, in such circumstances, the leaves go.

I do not at all insinuate that such may be the case; but I have found such causes existing in my own practice. Our worthy progenitors, who succeeded so well with dung-beds, were careful in avoiding gross growth, and equally careful that no excessive heat should be beneath the roots of their plants. Hot water has so simplified these matters that we are apt to become careless. The extreme of bottom-heat has a very debilitating influence, and it should be carefully watched whenever pipes or tanks are used for that purpose separately, and all the more if there is not a good space between the heating medium and the roots. In such a house, if the flow-pipes had been used for top-heat, and brought back through the tank, there would have been less danger. As bearing upon the subject, I will mention the following facts, just hoping that they will be taken for no more than they are worth, as they happened some time ago. In November I turned strong plants into their fruiting-pots, about thirteen inches wide. Part were treated to a rich compost, part to a sweet, sandy, fibry loam, and pieces of charcoal, and bits of heath-soil. The first had leaves frequently burned at the edges, the latter were not touched. Cuttings from those liable to burn were taken off in January, and, when struck and potted, again divided in two composts as before. Those in the richer compost were slightly affected, those in the poor compost escaped unscathed.

Again, hot-water pipes being used as bottom-heat, part were planted on soil, with a couple of inches or so between the pipes and the soil. Another part were planted in soil, separated from the pipes by nearly a foot of rubble, and a piece of sponge told pretty well its hygrometric state. The first were frequently scorched, the latter very seldom. Cuttings were taken again from the scorched ones, and the plants from them grown in pots; part again plunged pretty close to the pipes, the other part being only partly plunged, and the latter next to entirely escaped, while the first were again liable to scorplings. I doubt if, in these cases, the evil was in reality the disease so much spoken of; but its incipient stages were at least the same, and the precautions thus pointed to at least can do no harm.

I need not dwell on other disasters, such as the young fruit going off when the plant appears healthy, as this seems to take place from two opposite extremes—too much dry heat at the roots while the atmosphere is cold, or too much atmospheric heat while the roots are cold and surrounded with a water-clogged soil; nor need I allude to the disease of *mildew*, which is generally the consequence of the want of a relative action between roots and branches. I will rather say a few words upon the *gummy secretion*, as that has come more under my observation of late, and than which nothing can be more repulsive to a lover of beautiful fruit.

If I were to judge by what has come under my own observation, I would say that the disease is atmospheric rather than constitutional; nor do I think the mere nature of the soil as of great moment, farther than is implied in the precautions adverted to. I was sadly troubled with this ugly pest last year. I sowed seed from the same packet this year, and that had been saved from the same fruit as that sown last year, and this season I have not had a trace of the disease. In both seasons the plants had been grown in dung-beds, and in a pit heated by hot water. I will just mention the slight difference in their management during the two seasons.

Last year those grown in frames were allowed to roam over the whole width of the space with their roots as they liked. This year, when the bed was made up and the heat sweet, the frame being shallow, a trench was dug out of the centre of the bed about fifteen inches wide, and about fifteen inches deep; strong slabs were placed on each side of this trench, proper soil placed in the space between them, and, when that was heated, the plants were turned out, never having more soil than the space between the slabs, and no plants could well have done better. The space between the slabs and the two sides of the frame consisting of dung and leaves, was plastered over with clay, to prevent the material being a harbour for woodlice, and over this the vines ran in the usual way.

In the eleventh volume, page 504, No. 287, is the end view or section of a pit six feet wide, with two three-inch pipes for bottom-heat, and two for top-heat, with a pathway about two feet wide dug out at the back, so as to make the pit, for all practical purposes, into a small house. In that year, 1854, the Cucumbers answered admirably, being planted out in the bed, which was about three and a half to four feet in width. Last year, the plants here, as well as in the frames, were sadly pestered with these gummy ulcerations; not but what we got many fine fruit, but there was no dependence upon them. A fruit looking nicely to-day might have several ugly exudations to-morrow. Large lumps and drops of these sickly-looking secretions would also come out on the stems of the plants, and yet the plants did not suffer as one might have expected. It frequently seized the young fruit just as it was finished blooming, and then there was little chance of curing it by any means. This year, as I have said, there was not a diseased plant or fruit, though the seed came from the same packet as the previous year. Now for the difference in treatment.

Any one who will take the trouble to look back at the section of the pit referred to will see that the pathway at the back was considerably below the ground-level, and below the surface of the Cucumber-bed, and thus was generally damp in consequence. I thought, also, that the atmosphere was apt to stagnate there, or it would have dried more from the heat, and even the damp been thrown into the atmosphere, and thus rendered evaporating-pans less necessary on the pipes for top-heat. To cause a more thorough circulation of air, largish drains were taken across, underneath the flooring, for supporting the bottom-heat pipes on a level with the bottom of the pathway, and rising up at the front wall, with a wide shaft beneath the pipes for top-heat. To insure more perfect action, these pipes for top-heat were separated from the bed by a narrow wall, reaching as high as they did. The drains were made about eight feet apart; but, were I making such a pit afresh, I would have one in the centre of each light. Even as it is, the inclosed atmosphere is better kept in a state of motion.

Having appropriated the earth-bed to other purposes, the Cucumbers, instead of being planted out, were placed in twelve or thirteen-inch pots, and these pots were set, not plunged, just inside of the kerb, close to the path. They bore great quantities of fine fruit, were top-dressed very often with rich, open material after the days lengthened, some of them having turf rims above the rim of the pots about a foot in height, and turf and altogether one mass of healthy roots. The plants and pots were removed the other day, just because when Cucumbers in very cold weather, and the coals they would have required in such circumstances, were weighed against each other, the value of the coals kicked the beam.

Now, there may be nothing more than a fortunate coincidence in these little alterations, as bearing upon the pleasing result, as contrasted with last year; but if

so, then I fear we must look to something even more mysterious than constitutional tendencies for a solution of the difficulty.

In No. 390, on page 444 of the fifteenth volume, will be found a most interesting article from Mr. Robson, that so far confirms, at least, does not militate against, these views.

In conclusion, I would state, that watering with lime-water, and syringing with lime and sulphur solution, mitigated the evil; and, when the exudations on the fruit were not very large, rubbing them off, and daubing the place with a powder of equal parts of sulphur and lime, would give you fruit with nothing worse to look at than a few healed scars. Of course, in making a change of plants in such circumstances, every particle of soil should be removed, and the whole place receive a thorough cleaning.

R. FISH.

CULTURE OF THE EXOTIC HEATHS.

(Continued from page 129.)

WATERING.—After having potted the plants as described in my last paper, the cultivator should perfectly understand the right method of watering his Heaths. I mentioned the necessity of leaving sufficient space below the level of the rim of each plant to hold enough water thoroughly to moisten the whole of the soil in each pot. The reason for this is obvious; for, if the pot will not hold enough water, the lower part of the soil, as well as the centre of the ball, will be left from time to time quite dry, and the consequence will be that the tender roots left without moisture will perish, the plant will turn yellow, the leaves will drop off, and the plant, after struggling for awhile, will die. To prevent this misfortune, the moment any appearance of the plant indicates a languishing condition the ball should be turned out and examined, and, if found to be dry in the lower strata of the soil, it should be placed in a vessel of water deep enough to cover and soak the ball thoroughly. Perhaps it may require three hours to accomplish this, or, if not very dry, less time might be sufficient. The Heath seldom requires watering overhead, more especially in winter; for if the branches and foliage are kept wet in the dark, cold days of that inclement season, such injudicious treatment will be sure to bring on mildew, an almost fatal disease; therefore by all means avoid wetting the foliage in winter, and in damp weather at all times of the year. The best time to water the plants during the warmer months of the year is in the evening; the water then will not evaporate, but sink down gradually to the roots, besides giving a cool atmosphere around the plants. The time for this evening watering will depend upon the state of the season. Our climate is so variable that sometimes winter lasts a considerable way into spring, and often intrenches as much on the autumn. The cultivator must exercise his judgment and discretion, and water accordingly. As an average it may be said that evening waterings may commence in April, and continue to the middle of September. The rest of the year the water should be given in the early part of the day. This applies with great force to such plants as are kept in frames or a pit through that season. In a dry, good greenhouse even it is desirable. By giving the necessary quantity of water during the dark, short days in the morning, the moisture on the soil or ashes in the pits or stage of the greenhouse dries up before shutting-up time, and the air is not then so loaded with atmospheric moisture, as it would unavoidably be if the water was given in the after part of the day.

Great care must be exercised that the plants are not watered too much. Of two evils this is the greatest; for, if the soil becomes thoroughly sodden with water,

the roots all perish, and the plant dies suddenly, even when it is apparently in green, vigorous health. "How is this to be known?" the amateur will inquire. Observation gives that knowledge. If the surface of the soil continues wet, and becomes mossy, which it will infallibly do, we may be certain there is something wrong at the root. An ignorant or thoughtless grower, seeing his plant drooping, supposes that it wants more water, and applies it with a diligent and heavy hand, thus rendering matters ten times worse. With such mismanagement the plant is sure to perish. I have sometimes restored a plant in such a state, when not too far gone, by turning it out of the pot, allowing it to stand on the potting-bench for a few hours to dry, then reducing the ball, and repotting it in a smaller pot, with a more perfect drainage. Sometimes the drainage becomes choked, and then the superfluous water is retained in the pot. The remedy for this is to prepare some fresh drainage, pick out the old, replacing it with the new, and repotting the plant, watering in all these cases more carefully than before.

It will be evident to the intelligent amateur that the watering of Heaths is rather a ticklish affair. He may give too little, or he may give too much. In general the plants themselves will indicate what they need; but they should never be allowed to flag, or the soil to become quite dry. When the free-growing kinds are in rapid growth, and the weather is very warm, they may require watering both morning and evening. I mean such species as *Erica hyemalis*, *E. hybrida*, *E. Wilmoreana*, *E. Sindriana*, all the varieties of *E. vestita*, and such-like, require more water than the slower-growing and more valuable species, as, for instance, *E. aristata*, *E. ardens*, *E. densa*, *E. gemmifera*, *E. odora-rosea*, *E. taxifolia*, and similar species. For these latter kinds less water is needful; yet sufficient must be given to thoroughly moisten the soil.

To know when a Heath requires water the following indications must be attended to:—The surface of the soil should be dry; the weather should be dry also. If the pots are green on the outside, it is a sign that the soil inside is wet; also, if moss appears on the surface of the soil, it is an indication that the soil is in an ungenial state. In such cases the pots should be washed, the moss scraped off, and the surface of the soil stirred, to allow the extra moisture to evaporate.

Heaths in large pots, which may, perhaps, be large, valuable specimens, require considerable judgment and experience to water them properly. The large body of the soil may be moist, even wet, and yet the surface may be dry. The large growers for exhibitions round London have studied this important point to a great extent. They can tell, by merely tapping the outside of the pots, whether they require water or not; also, by lifting up the pot, they can judge still further by its weight the state of the soil as to its dry or wet state. Wet soil, it is well known, is heavier than dry.

I trust I have been sufficiently explicit and minute in the directions how to water Heaths, so that new beginners may perfectly understand this important point. I will just add, the New Holland genus, *Epacris*, requires nearly as much attention in watering as the Heath.

T. APPLEBY.

(To be continued.)

FILBERT CULTURE.

CERTAIN districts, from time immemorial, have been famous for producing certain articles with a degree of excellence not expected elsewhere. We have heard of Cheshire and Stilton cheese, York and Hampshire hams, Ware and Kingston malt, and many other things in that way; and here, in our own more limited area

of operations, certain localities are famed for furnishing fruits and vegetables of a better kind than other places are. We have Pears from Jersey, *Broccoli* from Cornwall, and *Asparagus* from the Vale of the Thames, in better condition than when these three articles are all produced at one place, and many other things in a similar way might be pointed out; but the subject of my present chapter is THE FILBERT, almost peculiar to the county of Kent, and the culture of which seems to be better understood here than in most places.

Its cultivation involves a greater amount of artificial treatment than that of most other fruits; and strangers, who have only seen a solitary plant or so in the midland or northern counties, have but a very imperfect knowledge of the assiduous care with which the Kentish fruit-grower tends this plant. A highly-trained wall-tree has not a greater dissimilarity to an open standard than has the closely-pruned Filbert of Kent to the rambling Hazel-bush or tree from which it springs, and in which form it is not unusual to find it where its culture is but little known.

SOIL AND SITUATION.—The natural habits of all robust-growing plants form a fair indication of what will suit them in a cultivated form; so the dry, gravelly banks on which our wild Hazels are found will be a very good guide, in most instances, for their improved offspring. Though there is often a diversity of soils planted with Filbert-trees, still the term *dry* must in all cases be insisted on, and a situation naturally dry is much better than one made so by draining; in fact, it is questionable whether any land that has required draining can be brought to produce a profitable crop of Filberts. The soil on which the best crops are produced here is a pale yellow loam liberally intermixed with stones of medium hardness, and with a rocky subsoil at no great depth. The aspect is not of so much consequence as the nature of the soil; but, when a choice is to be had, the south-west is generally preferred. A good trenching should be given, so as to give at least eighteen inches of good tillage earth in which to plant the trees. This is on the supposition that a new plantation is to be made; but, if a few trees only are wanted in some orchard of mixed fruits, some modification of the above may be made. Yet it is not advisable to plant them under the shade of other trees; for though they are often enough placed so here, the practice is not considered good, and the best results are obtained when they are allowed to form a plantation by themselves. Shelter from the cold winds of early spring is of much service to them, so that a high hedge or wood to windward is a useful adjunct, and sometimes an artificial means of sheltering is adopted, as will be shown hereafter; for the female blossoms of the nut are very susceptible of injury from frost, and, like other fruits, the crop is sometimes irrecoverably lost from its visits.

PROPAGATION OF THE PLANTS.—In this case we have to fall back to nature again, as the best modes of propagation are by the natural method of suckers or seeds. The latter, being uncertain in producing always good-bearing trees, is rarely adopted, save by those who are anxious to have some other sorts, while the possibility is, that many of them will degenerate into the common wild Hazel. Be this, however, as it may, it is certain that seedling plants do not bear so easily as plants from suckers, cuttings, or grafts; and, as this is important, it is better to secure a good-bearing plant than an uncertain one. Hence the general adoption of suckers, which, by-the-by, are not produced in any great abundance, and, when the cultivation is better understood, there will be fewer still; but I mention suckers as the most common way of propagating the species, as grafting is tedious, and cuttings do not generally succeed; and seedlings, as stated above, having a tendency to sport,

and return to the original wild Hazel, suckers are, for many reasons, the most suitable way of procuring young plants.

PROCURING A STOCK.—Extensive fruit-growers around here rear almost all their own trees of Apple, Pear, Plum, Filbert, Gooseberry, and Currant, and have generally a plot of ground set apart as a nursery for such purpose. Here are rows of stocks ready for working on—a principle that might be copied by many gentlemen's gardeners; Gooseberries and Currants by the thousand, and generally more or less of Filberts; but it must be observed, that the Filbert is, perhaps, more dainty as to the situation it likes than most other fruits, and, consequently, is not found in every nursery of this sort, for the very good reason that the grower does not want it for his own planting; but when the Filbert really does grow well, few fruits pay so profitably; but, as before said, every place does not suit them, and even considerable differences are observed in plantations adjoining each other, and seemingly equally suited as to soil, aspect, and the other features necessary to success. However, it would be advantageous for the intending planter to procure his plants from a soil inferior to his own, as few plants like to change to a worse place; but the stock ought not to be stunted and weak. Most growers of Filberts take up a quantity of suckers from some old plant that has been left to produce them in a way that will be explained hereafter, and grow them a year or two in a nursery before planting out, during which time they are pruned in so as to form the future shape of the tree.

PLANTING.—Presuming the plot of ground, as noticed above, has been prepared ready for planting, it is necessary here to consider to what purpose it can be put in the interval the trees are arriving at full size; for, be it remembered, that in the cultivated condition the trees are not allowed to grow fast, so that it is several years before they arrive at what is here called their full size, and during that time the ground might be occupied by some useful crop. The common practice here is to plant the Filberts at the rate of about 300 to the acre, or, in fact, in rows twelve feet apart, and the same distance from each other in the row; and between each plant, and also between each row, Gooseberries or Currants are planted, so that the whole plantation presents a tree at every six feet, three-fourths of them being Currants or Gooseberries, as above, and one-fourth Filberts. It sometimes happens that Apple or other large fruit-trees are planted as well, a six-foot standard being inserted every twenty-four or more feet; but this plan is falling into disuse, as the Filbert does not do so well underneath the other fruit, and is, therefore, deserving a site for itself, except, as described above, Gooseberries or Currants be planted with it to occupy the ground for one year. In planting, rich stimulating manures will not be wanted if the soil be of a good kind, as fresh maiden soil is, or ought to be, sufficiently rich for this production. The best time for planting is the autumn, as soon as the leaf is sufficiently ripe to insure its falling; for, if this is not attended to, most deciduous trees retain them all the winter, and a new-planted tree with leaves hanging on it so long suffers more from the wind in consequence. As the trees are always dwarf bushy ones, staking is not wanted; but, if very severe weather follows quickly after their planting, a little litter round their collar would be of service; and it is proper to state here that the ground ought not to be trampled on when very wet if possible, as on its sweetness and general good tillage depends the future success of the Filbert crop. J. ROBSON.

(To be continued.)

GRAPES FOR THE MILLION.

HOPING my notes may meet the wishes of "A CONSTANT READER," at page 31, and for the benefit of any other reader who may be contemplating a south front or gable end of his cottage for the growing of the Grape, to "live under its shadow," I will give the private history and cultivation of my Vines from their infancy up to the present time.

It may be as well, in the first instance, to state that the plants under consideration are already subjects of history, for at page 406, Vol. VI., of this periodical, I wrote, "They are one *White Muscadine*" (which, to the carelessness or convenience of the nurseryman, turned out to be a *Sweet Water*), "and two *Black Esperiones*." I added another of the latter. They occupy part of one end of this stone dwelling, having an aspect east-east-by-south, subjected almost continually to a peculiarly cold current of air, and where winds from northerly points of the compass pay us periodical visits with rude and lengthened blustering. The Vines were thought of originally ostensibly for their foliage, and were never expected to ripen fruit on so uncongenial an aspect. In planting them, however, I adopted the best method I thought suitable in order to coax them to do so, and I am compensated in the result.

In November, 1850, I uprooted a *Brown Beurré* Pear and an *Apricot-tree* which never could bear fruit, and excavated the site they occupied two feet six inches deep, eight feet broad, and eight yards long, flanking the end of the house, allowing the bottom of the border, as I proceeded, to incline with a gentle slope from the wall, and then formed a longitudinal drain at its lowest pitch, six inches deep, to empty at its extremity into a dead well of five feet in depth, three feet in diameter, and filled loosely with large stones. The drain was then filled with stones, and also the bottom of the border, to the depth of six inches, graduating them so that the smallest for size came uppermost, and then their surfaces were completely covered over with a layer of turf reversed, and rammed firmly down. In the previous spring I had amassed a quantity of turf preparatory for planting purposes, and during the interval had it chopped and turned over occasionally. One half of this chopped turf, one half fresh soil from the kitchen-garden, two cartloads of pounded brickbats and lime-rubbish, and about three bushels of bones, which were broken small with a road stone-hammer—a nasty operation I remember, but our odd man got a better pair of trousers on that account—were well incorporated together, and then the border was filled with the mixture about a foot higher than the ground level, to allow for its settling down, and so it remained over the winter.

For Vines in the open air I prefer the early spring-time of the year to plant them out, and those propagated from eyes or short-jointed cuttings are to be preferred. These now under consideration were raised from cuttings, and they arrived to me in pots from the nursery in the beginning of February, when the border was immediately made level, and sites dug out sufficiently deep and extensive for the reception of their roots, which, as their balls were relieved from the pots, were carefully uncoiled in order to preserve every fibre possible. Then to a stout stake previously driven firm and rather slanting into the soil, about three inches from the wall, the Vine is made fast, first through the agency of some hay-bands wound around it to prevent the bark chafing, and then a piece of tar-cord round that and the stake, which keeps the stem firm whilst distributing the roots, and so effectually prevents those convulsive twitchings which trees are too frequently made to undergo in the process of planting, giving one the idea that their fibres ought to possess the elastic properties of Indian-rubber, which they do not; therefore let us thank the stake for preventing the idea being carried out. Spread the roots in layers, if there is a sufficiency of them, horizontally in circles, and cover each layer carefully with fine soil, which, if very dry, must be made to close around the fibres by the percolation of water from the spout of a can, or, what is still better, the tin rose of a watering-pot; but if we must tread, let us "tread softly," for it is a barbarous practice to jump and caper upon the roots; and if their points are brought to repose at a slight angle upwards, they will be so much more likely to retain a horizontal position onwards, which is so conducive to the future fruitfulness of the tree. Form the

ground at completion on a level with that appearance on the stem which it formerly occupied in the soil of the pot.

My four Vines, planted as above, were placed equidistant in the twenty-four-feet border, and each of them cut down to four eyes. A mulch of decayed leaves was placed over their roots; a Box edging, planted one foot from the wall, to prevent accidental injuries from the iron roller; and a seven-feet-broad gravel walk covers the remaining superficies of the border. Waterings throughout the summer were strictly attended to; and now begins a system of training. Every bud on the Vines broke well and strong, each pair of bottom-shoots was secured to the wall by nails and shreds, right and left, horizontally, and one shoot on each Vine was made to take an upright vertical growth; and when they had made four or five joints each their heads were pinched off to prevent them becoming monopolisers, as they are intended merely for the present purpose of encouraging root action, and to perform, *pro tem.*, the part of lungs for the plants. The horizontal shoots, which must be allowed to grow on without stopping, are turned to take an upright course when they have each accomplished the measurement of two feet six inches; and if they offer to bear fruit the bunches must be pinched off, for it is one certain way to ruin the constitution of the Vines permitting them to ripen fruit on their first or second year even. What laterals (young shoots) they throw out at the axils of their leaves during the summer are to be shortened by degrees in September, and the ends of the main branches stopped. About the middle of October clear the laterals entirely away, and encourage the ripening of the wood by admitting the sun to shine freely upon it. At the middle of November the horizontal branches, provided they are matured so far, which can be judged by the brownness and hardness of the wood, are cut to one eye above their vertical turns; but those which have not ripened their wood to that extent cut as near as possible to approach a uniform length. The lungs, or central branches, shorten back to two eyes, and thus the first year's training and *pruning* become completed. I lay particular stress on the word *pruning*, for when this operation is left to be performed in the spring there is no plant so likely to suffer from what is termed bleeding, a discharge of sap at the incisions made by the knife, as the Vine; and it is sometimes found very troublesome to stop. One of the methods for stopping such bleeding is to apply a heated iron to the part cut; other nostrums are sprinklings of quick-lime, daubings of white-lead, paint, &c.; but it is far better to prune at those times, when all these difficulties are avoided.

When ten or a dozen shoots burst forth on a Vine where seven ought to be the proper number, towards the development of a future model, eradicate the extras by rule of the finger and thumb, and leave seven only to take precedence upon it. Make them situated equidistant, one above, one below, and one at the extremities of the horizontal or main stems, as I will now call them, and give one vertical shoot for the lungs. Allow the latter and the extreme shoots on the main stems to take their upright course, and grow away without let or hinderance, and fail not to secure them to the wall with shreds and nails; but do not press the shreds too tightly around them, for that would stop the free circulation of the sap. Train the pair of shoots under the stems horizontally, and their corresponding number above vertically, and stop them when they have made about six joints each. For the satisfaction of the cultivator, the vertical shoots may each be permitted to bear a bunch of fruit; but do not tax the strength of the Vine beyond that for the present season; and bear in mind that fruit always appears on the succulent shoots which burst from the buds of the young wood grown in the previous year. These fruit-bearing shoots will endeavour to push forth fresh leaders at the joint below where they were stopped; but they must not be allowed to do so. Operate on the lateral spray by degrees, as advised last year; stop the main stems in October; shorten them to their ripened wood; cut the lung branches, and those that bore fruit, and those below the stems, completely away in November, and the training and pruning are completed for the second year.

At the beginning of the third year, the system of training for fruit in the future is to begin in earnest; so a consideration must be given towards the disposal and proper dis-

tances which the secondary branches are to take upon the wall for that object. The ultimate vertical growth I allow the main stems to reach is fourteen feet; but I do not permit fruit above the height of twelve feet, for the following reasons:—Exceeding fourteen feet, the Vines are not so manageably under control; and above twelve feet the fruit appears beyond what I think a comfortable line for the eye; besides, the idea of gaining a larger produce than the twelve-foot superficies would yield, is to grasp a larger quantity of bunches, though not, in point of fact, a greater weight of fruit. Two feet apart is the distance I give between each two secondary branches, viz., at two feet, measuring from the ground level, allow a pair of buds to grow from the main stems, one opposite the other; train the shoots horizontally, to meet and to pass even to their extremities; then stop them for good, and pinch away every lateral they make in its infancy. Possibly, three similar tiers of secondaries, at two feet apart, may be achieved this season; and these tiers are for the purpose of producing the fruit-shoots next year; therefore, what fruit they attempt to form at present, pinch it ruthlessly away. Train a pair of horizontal fruiting-shoots nine inches below the secondaries just mentioned, and allow them to bear two bunches of Grapes each. They should be stopped at three leaves beyond the nearest cluster directly the fruit is set after its blossoming, and not allowed to elongate again. What laterals they form should be pinched back to one leaf when they are quite young; and when the Grapes have attained the size of early peas, thin them out with a sharp-pointed pair of scissors to an extent that the berries which remain shall hang perfectly free, in space sufficient to admit thrice their circumference between each other; in the meantime, the rule of finger-and-thumb should have been discreetly given to the spray upon the main stems. No central lungs are encouraged for the future; but two or three equidistant shoots may be allowed to grow on each stem, upright, out of the way, and made secure with zinc wire; for it is always advisable to keep up a growing disposition, and to encourage an active root action, by leaving a few branches to revel at their pleasure; and it is for this purpose that the two feet extra length above the fruit-bearing parts to the main stems is given.—UPWARDS AND ONWARDS.

(To be continued.)

NAMING FLORISTS' FLOWERS.

UNDER this head I was charged by "H. C. K.," who I take to be the same as "SYLVESTER," with teaching nonsense, and I accused him for meddling with such things, as he evidently did not understand the subject; not that he does not understand Latin, but that he is not aware at this moment of how it is applied in the language of botany. A man may be able to parse every line of the *Æneid* backwards, and yet not be able to name a Daisy in botanical Latin. I said *Diadematum regina* was wrong in a trade list, and that *Diadematum regium* was the name I gave and "intended." "H. C. K." said that *Diadematum regina* "had the advantage of being sense," and there are others, from whom I should expect a better knowledge of the matter, who have fallen into the same error; but their "ear" is vitiated with the names of the florists. Scientific men never use the substantive genitive plural for a specific name, or so extremely rarely that I cannot call a single instance to mind. The florists have ninety-nine out of a hundred of all their names in either of the two genitives, singular or plural—more often the latter, as *Géant des Batailles*, *Rex rubrorum*, and *Queen of Scarlets*. But to give "H. C. K." the benefit of a "suppose," that the genitive plural was commonly used, as he thought, I should have been barred from it in that instance, because of the accent which is on the antepenultimate vowel, making such a harsh pronunciation as no "cultivated ear" could submit to pronounce. *Diadématum* would be sufficient to throw a lady into fits, while a maid of honour could pronounce my word *Diadématum* with a smile. Knowing that I should be "out of court" on the genitive plural, and out of the fashion on the accent, I followed the best authorities, who had named the greatest number of plants in the same genus, and I produced a smooth name, and one as good as is to be met with

from my predecessors. I might have told all that at first; but, on seeing the glaring error of a man so positive, and knowing I held the ace and all the honours in my own hand, I chose rather to play out the game, and take my chance of more of the "slips;" and now I shall tell you how they came tumbling in, as I was quite certain they must have done.

Finding me so positive, he knew there must be a screw loose somewhere, and the plain question he asks is, "Tell me on which vowel is the accent in your word *Diadematum*." I answer, That is just the question you should have asked before you could be in a position to perceive whether I was right or wrong, seeing that you do not know the language of our science.

The next question he asks is the following: "Is there, then, in the Latin language, such a word as *Diadematum*, i, 2 dec. n.?" There is not; and if there were, I could not use it in the nominative singular, because it is not the fashion to use it in that case, in conjunction with an adjective, in our Latin.

The next "hand" admits that "he believes the name intended is *Geranium diadématum regium*." Is it, therefore, logic to "believe" in a thing, and to believe it an error for another to believe the same? How could you know that I did not believe as you do, or that I did not "intend" the name to be as you believe? and how could you have founded the charge against me without knowing that I did not intend it to apply that way? You are as wrong in this last conclusion, however, as you were in the original charge—I did not intend it for *Geranium*. Those who understand this matter know that *Geranium* had been separated from this group of plants as early as 1788, and that before that period the custom was to give the specific names, not in two adjectives, and never in the genitive plural, but in many adjectives, and mostly in the ablative plural, as, *Geranium calycibus monophyllis foliis adscendentibus lobatis pubescentibus*, "the Balm-leaf *Geranium*." But the truth is, I am not responsible for *Diadématum* at all; I only took it on my shoulders in order to have the better opportunity of correcting a growing evil—that of honest people putting their fingers into other honest people's pies, without knowing of what they are made, and that of lending the ear to a false standard of pronunciation, rendering it more repugnant to the unlearned than it really is, although it cannot be denied that botanical pronunciation is just what it is. Pliny used the adjective *Diadematus* with the accent on the penultimate, thus—*Apollo diadématús*; but whether the adjective is declinable or not is more than I can tell, and I suspect is more than university men can tell me. I never saw it but in *us* and *um*. L'Héritier in France, and Sweet in England, are the best authorities we have on the Geraniaceæ; the latter wrote *Pelargonium diadématum* before I could conjugate the verb *amo*. Subsequently he wrote *Pelargonium diadématum rubescens*, and *bicolor* followed, but from whom *non mi recordi*. The three beauties flourished, then faded, and last of all they died, and were buried in one grave. While they were in *dormito*, men of the names of Lindley, Loudon, and Donn went through the land, numbering such plants, and, of course, missed the Diadems. Twenty-seven years after their funeral I happened to learn something about them which was not quite free from suspicion, and knowing the grave, and that the law against grave "lifting" was repealed, I had them taken up, examined, proved, and found another gem upon them better than the rest, and I named it *regium*, in conformity with the ancient usage of the family, that puzzled some and deceived others, to whom it may be a consolation to know that the highest philosophers were on the wrong scent a few years since, exactly in the same way, by a name which Dr. Lindley gave to one of his books, *Nixus Plantarum*. "What on earth could Lindley mean by such a name?" Was "*Nixus*" an adjective or an adverb, or what? or did he make a slip of the pen, while he meant *Nexus*? From whisperings it came to *gabble*;* but the Doctor explained as I have done this day. *Nixus Plantarum*, the tendencies of plants or of the vegetable kingdom—"Astra, quæ se nixu suo conglobata continent,"—*Cicero*; therefore all the dons were wrong: the word was quite different.

* *Gibble gabble*—obsolete Scotticism for scolding, gossiping, and intermeddling.

If my books could afford it, I should be glad to furnish "Sylvester" with more information about the adjective *Diadematus*. According to Ainsworth there is but one authority—*Apollo diadematus*, Plin.—D. BEATON.

IMPLEMENTS CONNECTED WITH THE GARDEN AND HOUSEHOLD EXHIBITED AT THE ROYAL AGRICULTURAL SOCIETY'S SHOW.

At the stand of Messrs. Burgess and Key, of Newgate-street, London, we noticed the following:—

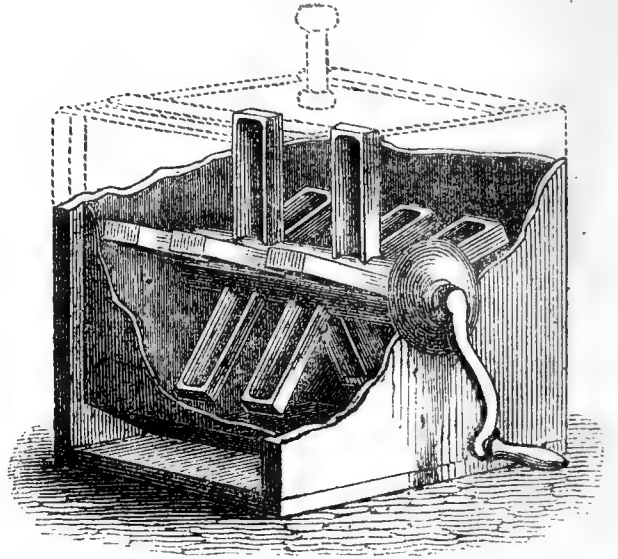
LAWN MOWER WITH REGISTERED IMPROVEMENT.—It will cut the grass most readily when dry; is very easily regulated;



and partly rolls the grass after mowing it. It is a delusion, however, to suppose that one man can use even the smallest of these Mowers over any extensive surface. The aid of a boy or another man to pull is necessary. The expense of this extra assistance is more than compensated by the rapidity with which the mowing is effected. Before storing away after using, the machine ought to be thoroughly cleaned and dried. In order to answer an inquiry from "W. H. M.," we will add, that although we should not like to endorse everything that is said of any machine, we have used these grass-cutters for a number of years. Our last was twenty inches wide, our present is twenty-two inches. It is worked by two men, one holding and one drawing, taking each part alternately. When the ground is of a level slope, and the grass dry and short, we always consider two men clear as much ground as six men would do with their scythes and brooms. These small machines do little good when the grass is wet, but then the scythes may be best used with advantage. The machines make beautiful work when the men are used to it and take a pride in it, as ours do. A large horse-machine will cut even when the grass is wet; but they are useful chiefly on very large lawns, where there are few or no beds, &c.

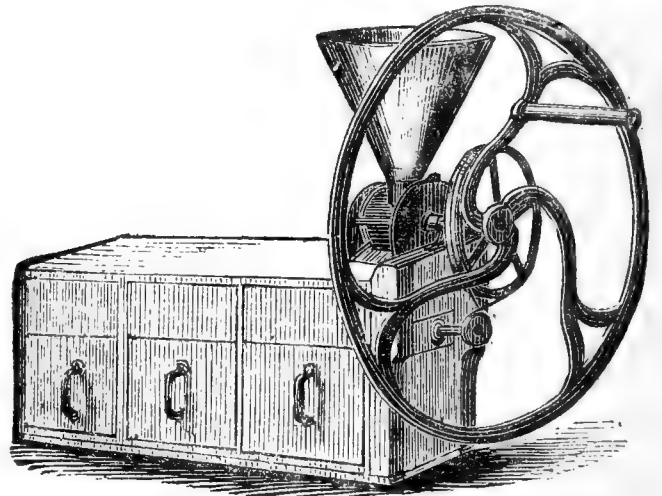
ANTHONY'S PATENT IMPROVED AMERICAN CHURN.—The Royal Agricultural Society of England have three times awarded their medal for this Churn; the first at Exeter, the second at the Great Exhibition (where it was one of the few implements selected for trial before the Queen), and the third medal was awarded at the Gloucester Royal Agricul-

tural Meeting in July, 1853, for the improvements made by the manufacturers. At the trial before the Judges there this Churn made in *ten minutes*, from 4 quarts of cream,



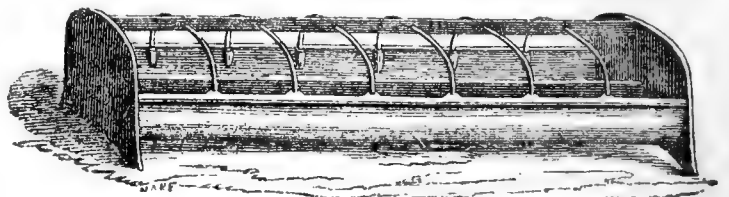
4 lbs. 6 ozs. of butter of the finest quality. The best of the other churns made only 3½ lbs. from the same quantity and quality of cream. The *Royal Agricultural Journal*, p. 41, says, "This form of Churn is the best for churning sweet cream, and will, undoubtedly, produce butter from milk or cream, in any form, in much less time than any churn that has yet been introduced." It may be had of any size, from one capable of producing 3 lbs. of butter at a churning, to one capable of producing 20 lbs.

EMIGRANT AND DOMESTIC FLOUR MILL.—This Mill is of very simple construction, having a dressing machine



attached, so that it grinds and dresses at one operation. It will grind and dress from one to two pecks per hour, according to the size, and, the grinding parts being steeled, are very durable.

IMPROVED DOUBLE NORFOLK PIG TROUGHS.—The advantages of these Troughs are, that although the smaller



size is but three feet long by ten inches wide, the compartments are so arranged that fourteen pigs can feed at the same time without interfering with each other or wasting the food. This wasting mostly occurs from the pig throwing the food forward with his snout over the side of the trough opposite to that side on which he stands. A high longitudinal division down the middle of this Trough prevents such an ejection.

BRODIAEA CALIFORNICA.

BROUGHT home by Mr. Hartweg in June, 1848, and said to have been collected upon the mountains and plains of the Sacramento, where it is scarce.



This bulb is very like the old *B. grandiflora*, from which it differs in the following particulars: it is a much larger plant in all respects; its leaves are more fleshy; the flowers, which are pale blue, with darker streaks along the middle of the divisions, have a tube which is slightly inflated, and much shorter than the limb; the flower-stalks are also much longer in proportion to the flowers.

It is hardy, and requires a strong sandy loam, with the same kind of treatment as *Scillas*. It is easily increased by offsets from the old bulbs. The species is rather pretty, and flowers freely from July to October, or even Christmas, if sheltered by a frame.—(*Horticultural Society's Journal*.)

COW-KEEPING.

As a person of experience in this matter, always having had a large dairy and great success, I feel a desire to say a word to your correspondents who put a query to you at page 98.

The small cow commonly called *Alderney* is the best an amateur can have. Let them look to the cows having yellow in the fleck of the ears and tail; and when they have got their cows from Fowler, or from elsewhere, let them take care that none but a good-natured person has to do with such gentle creatures, and let them also take care that, when the cows are milked, not a drop be left in the dug. Leaving milk in a cow's udder at milking-time will soon ruin any milch cow.

Also, let them take care that the person who milks finishes off by *punching* up the udder as the calf does when sucking. This prevents mischief to the udder. These *Alderney* or *Jersey* cows are small cattle, but they give a thorough creamy, rich milk, and are so docile, that, with kind treatment, they like being caressed as much as a dog, and are used to being tethered in small pastures.

Next to this stock, I should recommend the *Aryshire*, a beautiful little beast, and an excellent milch cow, with the advantage of having symmetry for grazing.—W. MASON, *Necton, Norfolk*.

FRUIT-PAINTING.

THIS is a subject which I am not aware has been touched on yet in your very instructive periodical; yet, as I have long found that the best way to remember the name of a plant is to write it down, so, also, I find that the best way to remember the characteristics of a fruit is to paint it.

As no one has taken the subject in hand, I shall make bold enough to do so, premising that the few hints which I give are only for beginners. The first thing to be done is to get a sheet of drawing-paper and a box of Miller's shilling water-colours. Armed with these, which will only cost you sixteen pence, you may now set to work by stretching your paper on a table or board sufficiently large, and tack it down at the four corners. This done, then draw with a pencil four parallel lines at the respective distances of three, four, five, or six inches apart. Supposing that the sheet is to be filled with portraits of Pears, it will thus hold about three dozen, putting the smallest on the top row.

Then, by way of example, take a specimen of *Williams's Bon Chrétien*, which, when ripe, is of a greenish-yellow colour; put a few drops of water on a common plate; take your paint named indigo, rub a very little of it down in the water on the plate; after which, rub your gamboge paint in the same place till it brings up the yellowish-green colour wanted. Then, with a sharp knife, cut the Pear in half lengthways, lie one of the halves on the paper, outside downwards, and with a pencil describe its shape. Take plenty of colour on your camel's-hair brush; begin and lay it on the farthest side first, working towards you; as soon as dry, if not dark enough, give it another coat of paint. Vandyke brown will generally give the desired colour for the eye and stalk; write the name neatly above it; and, when all is perfectly dry, you may rub out the pencil-mark with a piece of Indian-rubber, and finish by drawing another brush gently over it with proper varnish.

This is the way I have done my fruit portraits, and hung them up in the fruit-room; they become quite interesting, helping to a thorough remembrance of fruits, which every gardener ought to possess. Of course, stone fruits cannot be done in this way; but then practice makes perfect, so that one can copy them by the eye.—J. RUST, *Gardener to the Right Honourable L. Sullivan, Fulham*.

TRITONIA AUREA CULTURE.

THE seeds should be sown immediately, and the pots kept in a very gentle heat. In a month or six weeks there will probably be a very numerous quantity of seedlings, and when an inch high it will be well to remove them to a warm and airy greenhouse. In March or April the balls should be divided, and the young plants, with their roots as little disturbed as possible, repotted into 16's or 12's. In August or September many of the seedlings will probably flower.

This species is, with me, quite hardy, and, covered with ashes, survives the winter; but the bulbs vegetate so late in spring as scarcely to arrive at a flowering state till too late to do any good. In a warmer soil than mine it might, perhaps, be otherwise.—C. L.

[A packet of seeds of *Tritonia aurea*—a fashionable Cape bulb—was sent to the Experimental Garden, from a valued correspondent near London, with the above excellent advice for raising seedlings of it so as to bloom the following autumn.—D. BEATON.]

QUERIES AND ANSWERS.

GLASS FOR A STOVE.

"Would you be kind enough to answer whether Hartley's rough plate glass would do better for a house, or, I would say, a stove, for growing Cucumbers, striking cuttings, and growing stove plants and Orchids in, or common sheet glass, which is generally used? And could you give an idea how much a house of this sort would make, out of one year's crop of Cucumbers only, supposing the house to be thirty feet long by ten feet wide?—I. W. C. L."

[You must make a little compromise in the matter. We

have a little preference for sheet glass in winter, though we cannot say we ever saw much against rough plate even then. For all the purposes you mention we would decidedly prefer rough plate for nine months in the year. For propagating and Orchids it would do admirably also in winter, and for Cucumbers, too, for anything we can say practically to the contrary. It would be a prejudice if we liked clear sheet then. But what is the use of Cucumbers in winter if you want to sell them? Nobody will eat them then, and, at any rate, nobody to speak of will buy them. For market purposes Cucumbers are a perfect eyesore in a place until London fills and large parties are given, say in February. We cannot well say what the money-worth produce of a house thirty feet by ten feet should bring. That will depend upon the market, the earliness as to the time they are cut, and the skill displayed. Grown on the limited root-room system we have several times recommended, and, properly heated, &c., inside, we could next to guarantee an immense quantity from such a house. We have had no experience in raising *Lilium speciosum* from seed. Apply to Messrs. Weeks for an answer to your other question.]

DOES WATER EXPAND WITH COLD?

"To settle an argument, will you please to inform me if water expands by heat or cold? My opinion is, that cold expands water, because I have noticed the glass on green-houses to crack in all directions through water accumulating between the laps of the glass, and, expanding by frost, thereby causing the glass to crack. Is it through the same cause that pipes burst if water is allowed to remain and freeze in them? because I have noticed pipes to burst more frequently when the weather commences to thaw, instead of, in the same way, I have noticed with glass, when the weather commences to freeze.—W. B. M., *Clapham*."

[The foregoing note contains so much relative to "things not generally known," and draws so many apparently just, but really erroneous conclusions from acknowledged facts, that we publish it for the sake of appending correct information relative to all the inquiries.

It is a marvellous demonstration of the providence of God that water expands when passing into a solid state—the state of ice. If it did not so expand, and thereby become specifically lighter than the water on the surface of which it is formed, it would sink to the bottom of that water, and gradually accumulate there, and never melt again; but by expanding, and, consequently, floating on the surface of the water, it remains in a situation where the sun and a warmer season soon reduce the ice again to water. It is quite true, however, that heat also expands water; in fact, the addition of heat expands water at all temperatures except near that temperature at which it freezes. It is this expansion in freezing which causes the water to burst the pipe containing it, and to crack the greenhouse panes of glass beneath which it is lodged. It is quite true that the fact of the pipe being so burst is only detected when the thaw follows, because ice has filled up the crack in the pipe, and, until this crack is opened by the thawing of the ice, no water can escape, and indicate the mischief done.]

MISMANAGED WISTARIA SINENSIS.

"I am one of 'The Doctor's Boy's' class of generally usefuls, with this difference from him—whereas *he* has to tend sheep, &c., I have to doff thick boots, mount white hose and pumps, and wait at table during company times, and if a few friends drop in to dinner. Also, whilst *he* has to clean and clip quickset hedges, I have to clean plate, knives, shoes, &c.

"I differ from him also in other things; for instance, I am just now in a bit of a fix. I have a *Wistaria* on a south-west wall which is about one inch and a half in diameter at the base of the stem, but not more than nine feet high, and looks likely to be shorter rather than higher, and there was no sign of bloom this year. (I was not here before.) The soil is a good, loose, clayey loam, about three feet deep. On one side of the *Wistaria* is a Pear-tree, on the other side a Fig-tree, both of which are, or have been, growing away all the summer with almost a rank luxuriance, whilst the next tree, a Pear, has not budged an inch all the

summer, nor produced any fruit. I have asked several old gardeners for advice; but they differ so widely, and are withal so unreasonable, that I at last resolved to apply to the fountain-head. For instance, one of the said gardeners advised me to stay until the middle of next summer, when the white sap would follow every cut of the knife, and then prune the Fig hard back. I thought, in my ignorance, that was quite enough proof of his knowledge of the subject.

"I am going to plant an Apricot and a Plum on the same border, and I have taken out the soil three feet deep, and put six inches of mortar-rubbish and brickbats and paving-stones on the top of it. Is that right? and shall I cut the trees back, to what height, and when? I have an old Sea-kale bed which is to be destroyed in the spring, and I wish to know how to make the most of it, and to get it early; and, lastly, will you please to tell me the name of these two flowers, neither being known by the aforementioned cabbage-stumps? I have numbered them, and shall know them.—GENERALLY USEFUL."

[The *Wistaria* never went on kindly. What is wanted now is to get a young shoot from the very collar of the plant next to the roots, and then to cut away the nine feet length of old wood. There are ten thousand *Wistarias* in the same plight as yours, and all the doctoring in physic or gardening will never cure one out of each thousand of them without first getting rid of the hide-bound old stem; and all this comes of sheer covetousness, or absolute ignorance of the natural ways of this prince of climbers. Some are so covetous as to wish a wall covered in one or two seasons, and never will allow the young climbers to be cut back sufficiently; and some do not know that cutting back is of any good or harm. No matter how large or how small a *Wistaria*, alias *Glycine*, is, when it is planted from a nursery-plant, it should have the first season's growth with little stopping, merely the point or points being cut back a little; but, at the end of the first growing season, the plant ought most certainly to be cut back to the last bud nearest the roots, and at the end of the second season the rule is this: if the shoot has grown ten feet, cut it back to three feet; if under ten feet, cut to one foot; but if under five feet, cut to the last bud again. Never take more than a yard of stem till you get above ten feet of annual growth. Your safest plan would be to get your nine-foot stem trained along the bottom of the wall quite close to the ground; and, if that does not cause a shoot to come from the bend, or under it, there is no hope for you but to cut back the whole thing to the bend next season.

You are right in the preparation for the *Apricot*. You ought to get trained trees, and not to cut them back at all. Such cutting back is the way gardeners ruin their wall-trees the moment they plant them. An old *Sea-kale* bed is very likely not worth a straw for any manner of forcing. You ought to keep it till you have young plants for a new one, one year under your own growth; but, if you should be "forced" to force the Kale of the old bed, take care that the old gardeners do not see it, else they will have the laugh at your expense next time.]

ORCHIDS IN A SMALL STOVE.

"I have just put up a small house as a stove, very small, not more than eight feet long and about seven feet wide. I have got a few plants which thrive very well; but I want to know whether or not I could grow about half a dozen Orchids, such as *Lycaste Skinneri*, *Oncidium papilio*, *Cattleya crispa*, *Stanhopea tigrina*, *Odontoglossum grande*, and *O. citrosum*. These Orchids are such lovely flowers, that I want to know if they will thrive and flower well in the temperature of a common stove before I procure them.—ANXIOUS TO LEARN."

[You will have first-rate success with such Orchids in your stove. The *Stanhopea* and *Lycaste* will do best in baskets filled with lumpy peat and sphagnum and pieces of charcoal. The others will do well fastened to charred blocks of wood or old Oak, long enough to go across and fix within the open mouth of a pot, and then turfy peat, chopped moss, pieces of charcoal, &c., packed round them. An average temperature of 60° at night will be quite sufficient for the winter months, and the base of the plants had better be dryish rather than wet.]

FAILURES IN A CUCUMBER-HOUSE.

"I have a Cucumber-house under my charge which is forty-five feet long, twelve feet broad, and eight feet high at back; three feet and a half at front, with a pit along the centre, four feet wide and eighteen inches deep, for the Cucumbers to grow in, with a hot-water tank underneath for bottom-heat, and a flow and return-pipe, with the back wall flued to heat the house. The Cucumbers were planted in September, and run up with a single stem to a trellis eleven inches from the glass; then the lead was pinched off and trained out along the trellis. The plants are free from any kind of insect; but the margins of the leaves are continually shrivelling up as if scalded. They have bottom-heat from 75° to 80°, as near as can be kept, and 65° to 70° the heat of the house at night, with a general rise by sun-heat during the day. As the back wall is flued I always leave the top sashes down about an inch both night and day, to let the condensed moisture escape a little, thinking it was that that lodged on the leaves, and when the sun broke out suddenly caused the scalded appearance; but it is not so, for I have noticed several change on a cloudy day, when the sun has never appeared.—J. C. W."

[We fear you have got a form of Cucumber disease very bad to master. Are you sure, however, that you do not give too much heat to your roots, or that the roots get too close to the heating-tank? They should be separated from it by rubble for about six inches, and care taken that the bottom of the soil is not dry. As further preventives confine the roots to half the space, use poor but fine loam, and keep up a circulation of air. See what Mr. Fish says to-day.]

PAULOWNIA IMPERIALIS, MAGNOLIA GRANDIFLORA, AND M. CONSPICUA NOT BLOOMING.

"P. C. A. will feel obliged to the Editor of THE COTTAGE GARDENER to inform him whether he considers it would be desirable to remove a *Paulownia imperialis*, which has now stood against a south wall for three years throughout the winter (at Bedale, in Yorkshire), and has formed strong wood, and appeared very healthy. The stem has had protection during the severe months of the winter. The tree now over-tops the garden wall.

"P. C. A. wishes to know whether it would be safe to transplant the *Paulownia* into a situation where it would not have the protection of a wall, on which it now covers more space than can be conveniently spared to it; and the tree has also the appearance as if it would take a handsomer form if uncircumscribed. If safe to transplant it, would this be the best time in which to do it? It has just parted with its leaves.

"P. C. A. also asks if a *Magnolia grandiflora*, planted for the last five years against a south wall, which has never flowered, although the foliage is rich, luxuriant, and healthy, is likely to do so with increased age?

"A *Magnolia conspicua*, planted against the wall of his house, facing eastward, and which has been there about nine years, has each season some fifty or sixty blossoms upon it."

[No tree is easier to move, or is less suited for a wall, than this *Paulownia*; but the middle of March is a better time to remove it than this. The tree, however, is of no use north of London, and hardly there, for its flowers. Poor, dry soil, and an exposed situation, are best for it, and for all soft-wooded trees, which are difficult to ripen in our climate. Whether the *Magnolia grandiflora* will flower depends on the kind of *grandiflora*. Some of the kinds never bloom on any account. The *Exmouth* kind blooms freely. It is very rusty under the leaves. *Magnolia conspicua* being without leaves all the winter is against it. In the shrubbery it would bloom better, we think.]

EARLY POMPONE CHRYSANTHEMUMS.

"Will you be so kind as to publish a list of a few select Pomphone Chrysanthemums which have a dwarf growth, and flower early (as early as *Hendersonii*), and which also have the centre well-filled up?—H. C."

[We have not seen any Pomphone so early as *Hendersonii*

that is half so good as that kind. We have seen but four kinds blooming in August, and two more in September, and the less said about them the better. Any kind which is not as good as *Cedo Nulli*, or *La Vogue*, or *Drin Drin*, will not "take" before October. The following are the best for you, and they are not long behind *Hendersonii*:—

Autumnum, Spanish brown; *Adonis*, fine rosy petals, with light bottoms; *President*, lilac—cuttings to be made on Midsummer-day, as it is very strong; *Le Nain Bébe*, a dwarf, and a little lighter than *President*; *Cedo Nulli*, blush or pure white in a light greenhouse, and out of doors tipped with cherry; *Drin Drin*, best dwarf yellow; *Pluie d'Or*, second best dwarf yellow; *Ninon de l'Enclos*, in the way of *Cedo Nulli* and *La Vogue*, orange yellow; but there are later kinds equally good.]

TO CORRESPONDENTS.

PRESERVING GINGER.—We shall be obliged by an answer to the following:—"I have got, this autumn, a good crop, in pots, of *ginger*. Can any of your correspondents favour me with the best method of preparing the root previously to submitting it to being boiled in syrup? The root externally is rough and unsightly."

HAMILTON ON THE PINE APPLE (J. K. V.).—The publishers are Messrs. Groombridge and Son, 5, Paternoster Row.

BINDING OUR VOLUMES (Amateur).—Only those pages which are numbered are intended to be bound up. Of course, if a page of advertisements is at the back of a page of the body of the work it cannot be omitted. This mingling of the advertisements with other matter we avoid as much as possible.

PLANTING ABOUT FISH-PONDS (An Old Subscriber).—We have submitted your plan to the judgment of others as well as our own, and we find no one bold enough to make suggestions. No one can do so justly without seeing the place.

CHICORY (Y. Z., Aylsham).—Cultivate and blanch it the same as you would Endive. It is even more hardy than the latter. *Alyssum variegatum* and *Cineraria maritima* are quite hardy.

PICEA NOBILIS CONES.—Mr. Bradley would be obliged by information from another correspondent how he has succeeded with them.

LASTREA ULIGINOSA (A Young Beginner).—We cannot agree with those who have decided that it is a species; for it is too closely resembling *L. spinulosa* to merit more than to be considered as a variety.

COTTAGE GARDENERS' DICTIONARY (J. N.).—It is intended to publish a Supplement.

STOVE FOR GREENHOUSE (C. M.).—This, without a chimney, is very injurious to the plants.

VINES (A Liverpool Subscriber).—If you refer to our advertising columns you will find the names of nurserymen who have Vines for sale. We can recommend any of those advertisers.

WEEDS ON CARRIAGE-DRIVE (G. R.).—Pour boiling brine over them. Take up some of your *Celery*, and cover it with sand in an out-house when frost commences. Throw some litter over that left in the ground, and put some Pea-sticks upon the litter to keep it from blowing off. Uncover the *Celery* in open weather.

TAX ON GREENHOUSES (H. Firebuck).—Who says that there is any such tax?

THE POULTRY CHRONICLE.

POULTRY SHOWS.

BIRMINGHAM. December 2nd, 3rd, 4th, and 5th. Sec., J. Morgan, jun., Esq. Entries close November 1st.

CRYSTAL PALACE. January 10th, 12th, 13th, and 14th. Grand Exhibition of Poultry, Pigeons, and Rabbits. Secretary to the Poultry Exhibition, William Houghton, Esq., Crystal Palace. Entries close December 13th.

ESSEX. At Colchester, December 31st, 1856, and 1st, 2nd, and 3rd of January, 1857. Secs., G. E. Attwood and W. A. Warwick. Entries close December 17th.

NOTTINGHAMSHIRE. At Southwell, December 17th and 18th, 1856. Sec., Richard Hawksley, jun. Entries close November 19th.

NOTTINGHAM CENTRAL POULTRY ASSOCIATION. January 13, 14, and 15. Hon. Sec. Frank Bottom. Secretary to the Canary Department, Jno. Hetherington, jun., Sneinton.

PRESTON AND NORTH LANCASHIRE. January 21st and 22nd, 1857. Sec., Ralph Leigh, Esq., 125, Church Street, Preston. Entries close December 13th.

N.B.—Secretaries will oblige us by sending early copies of their lists.

SOME MORE OF MY POULTRY EXPERIENCES.

FEBRUARY 7th, 1856. "Mr. Briggs," said my better half, "I must have some eggs."

"Send to the shop for them, my dear."

"I must say it seems ridiculous that when we had but

few fowls we had plenty of eggs and chickens; now the place is overrun with them, and I cannot get one or the other."

"My dear," said I, mildly, and with my most honeyed voice, "see the prizes I win with them. Look at your side-board."

"There may be something in that," replied my wife; "but half the eggs you refuse me will never hatch, and half the chickens will come to nothing. Recollect what I showed you in *THE COTTAGE GARDENER* last year."

"I am sure I do not recollect," said I.

"Listen," said my wife. "Now is the time when the future winners should be chosen, and every doubtful bird mercilessly disposed of. They will now furnish a delightful meal in exchange for their food; but, if they are kept till unfit for the table, they will not only have cost more, but they will be worth nothing."

"Very true, my dear," said I. "You may have a dozen eggs, and I will this year supply you plenteously with chickens."

"I hope you will," was the reply; but I fancied the tone said "I know you won't" as plainly as possible.

April, 1856. "My dear," said Mrs. Briggs, with the most heart-broken face imaginable, "I am sure I cheerfully give up anything to your pleasure, and do all in my power to contribute to it; but here is *my* lawn in front of the drawing-room windows tenanted by three hens with chickens, and lodged in rickety, shabby, old coops. It is too bad."

"It is only for a day or two," said I. I thought she would get reconciled to them.

June, 1856. "What am I to do for the children?" asked my wife. "The weather is so hot, the meat is so hard, the children are tired of it. They must have a change of diet, for they eat nothing, and I am sure the younger ones fall off daily."

I saw the blow, and tried to parry it.

"Get them some fish," said I.

"No," replied my wife; "let them have some poultry. Tell your man to kill half a dozen chickens."

Did I hear aright? Kill half a dozen chickens! Speak of my pedigree-fowls as though they were mere articles of food! All my painstaking to end in growing an extra fowl or two! I was confounded; but, recovering myself, I said, "I will get you some chickens."

"But surely," said my good partner, "you will not buy when you have so many running about?"

For once I assumed the dignity of the "head," and said something about the superiority of our judgment.

October, 1856. Have too many fowls decidedly—must get rid of some—killed half a dozen cocks—they were hard, being too old. My wife remarked how much better it would have been to have killed them when they were young. I explained it was necessary they should attain a certain age before I could make a selection.

"And what does your selection end in?" said she.

"This," was my answer, holding up a handsome and large Silver Goblet.

She laughed, but said, "I do hope you will sell some of them. They overrun the garden, they eat the vegetables, and they make *such* a crowing in the morning."

I could not help seeing there was much truth in what my dear one said, and I resolved to be wiser for the future.

I was fortunate in knowing one of our best poultry Judges, and I invited him down to go over my stock with me. What a wretch he appeared to me! What a barbarian! I had made a little scheme of my own; I would show him first some very good birds, and then lead him on from surprise to surprise till he saw my best, which I thought would overwhelm him with admiration and astonishment. My illusion was destroyed at the first pen. Instead of approval, he said, "There is only one hen worth keeping in this lot. The others should have been killed or sold long since."

How thankful I was my wife was not there to hear him! I had put up seven pens, all, as I thought, increasing in merit one above the other. My friend, after shifting and changing almost every bird, made up two pens out of the seven.

"These," said he, "have a good prospect of success. All the others should be sold or killed."

No man likes to have his dreams dissipated at once, and I was no exception. I therefore fought for it.

"But," said I, "had you been in my place you would have kept them till now."

"No," said he, "certainly not. More than half the poultry amateurs destroy the pleasure of the pursuit, and often give it up, by their own obstinacy. In every hobby it is absolutely necessary to be merciless, and, above all, to act with decision when it is necessary to lessen numbers; more especially is it so in poultry. Three parts of the birds I see here ought to have supplied your table, or some one else's, three months since. They would then have paid for the food consumed, you would have saved what they have eaten since, your runs would have been fresher, and your really good birds would have done better. Poultry may be made a profitable pursuit if people will be advised, but not if they follow their own crotchets. Amateurs should take a lesson from the 'Diggings,' i.e., hail a nugget as a God-send, but, in the mean time, be content with the dust to be found by careful and sometimes tedious washing."

I think I stand well for Birmingham. I have greatly thinned my stock. My wife offers me her garden *during the winter*, and, although we shall be ten (p.v.) at table on Christmas-day, we hope the approaching Birmingham Show will supply, with those we have, a Silver Cup for each.

I shall write again.

POLISH FOWLS AND THEIR TRADUCERS.

IN troth, is it high time that some friend of the Polish race of fowls stood up for their just claims. I complain against such men as the Liverpool and Doncaster schedule-makers; and still more do I anathematise those drawing-room writers on Polish fowls—men who really have no practical knowledge of what they write.

Sitting over a warm fire, at a table covered with green baize, they either copy the inaccuracies of former writers, or deal out namby-pamby sentimentalism of their own. Such men affect to tell you that Polish fowls, though possessing high claims on the score of beauty, are yet only fitted to be the occupants of an aviary! pets, pretty pets, and nothing more! their topknots wholly incapacitating them for the farm-yard.

Now, though I doubt if amateurs of Spanish and Dorkings really keep their crack birds in farm-yards, yet I will take our fine author at his word, and show, and that from experience of three years, that of all the sorts of fowls to be found in a farm-yard, none, I repeat, *none* are half so wild and absolutely inapproachable as are Polish fowls. For three years have I had them kept in a farm-yard in the country with other fowls; but the catching of them, in the daytime, at least, was ever a matter of the greatest difficulty. Wild and suspicious, off they scampered on the slightest approach. "Could these really be the birds," thought I, "that but a few months before actually eat tit-bits out of my hand daily when kept at home?" Even so it was.

"But, Sam," says one of your readers, "why should these Polish of yours be *wilder* than other fowls in the farm-yard? Are you not proving too much? Come, your reason." I can only account for it thus: I consider that their large topknots, which inexperienced writers thought would incapacitate them altogether, are really the cause of their great shyness. The birds, aware of the "umbrageous canopy" of topknots impeding their sight laterally, are ever on the alert, and suspicious; they are constantly "at gaze," as the heralds say; and, of a verity, no fowl is quicker-sighted *before*; certain it is, they are wild as deer. They, indeed, be run over by carts and wheelbarrows! they be trodden under foot by cows and horses! Oh! this green baize, parlour scribbling on poultry matters!!

Your shifty, pinching schedule-makers jump at such excuse for saving a dirty penny! "Pare 'em down, pare 'em down—save a penny where we can; for see, Polish are but aviary birds, and — not fit for a farm-yard!"

I affirm, on experience, that no fowls are better layers; none are more, if so beautiful; none can better take care of themselves; and none are such delicious eating. May I not add, that few are rising more surely into general favour? A very few years ago but about twenty or thirty pens were mustered at Birmingham, while now the number is well nigh 100; and certainly in no classes is the competition so

keen, so enthusiastic are the amateurs who do keep them and know their merits.

That they will muster in gorgeous array at Birmingham this year, I doubt not. Would that they be properly judged! Let no pen where the cock has a pancake, a flat, long, thin pancake topknot, again take a Silver Cup; but let the topknot be *round and compact*, and large withal. Let the breast of the bird be spangled, *not laced*, for they are spangled Polish; and the more spangling, even on the shoulders and back, the better. White feathers in the cock's topknot are not faults, for all fine-bred Golden Polish, on the second summer's moult, do acquire, more or fewer, white feathers in the topknot. In the first year, till the bird has moulted, white feathers are not; but most certainly do they appear when the bird gets into his second year; nay, Mr. Vivian, the first introducer of our fine Polish breeds, looks upon white feathers in the adult cock as a mark of purity of blood. For my own part, I consider it a matter of little or no moment whether a fine, large, round, and compact topknot has, or has not, white feathers in it. Some fanciers like them, as giving more variety; others would prefer to see them not; and let us hope, too, that the hens may have their full share of the attention of the Judges. Last year, at Birmingham, the hens were duly taken into account, and I observed that some amateurs, who also think only of the cock bird, were at a loss to account for the awards. "Look at my cock bird," indignantly exclaimed a well-known Polish fancier; "not such a bird in the whole room; yet he's not noticed!" True enough it was; but the hens were dark on the back, and confused in their marking. So much, then, for pinching committee-men and inexperienced writers on Polish fowls.—SAMUEL SLICK, *Hull*.

HINTS FOR THE COUNCIL OF THE BIRMINGHAM POULTRY SHOW.

THE Birmingham Annual Exhibition of Poultry is now about to take place, and naturally excites extreme interest among all amateurs throughout the United Kingdom. This arises from the combination of two powerful causes. It was in that "good old town" our poultry fancy received its first stimulus; it formed the nucleus from which almost every town, certainly every county, was taught the possibility of carrying out these most interesting, popular, and really instructive *réunions*. It is, therefore, but natural that its well-doing and prosperity are the first hope of the lovers of poultry generally; its interests cannot be regarded otherwise than their own personal ones; and the prevailing desire is to preserve it in its path of usefulness, and to prevent, by all available means, any temporary obstacle from detracting from either its permanency, its importance, or its extension. It has hitherto rejoiced in the universal acknowledgment of its superiority over all others, whether it be considered numerically, or as regards the perfection of the birds contesting. Then let all exhibitors, every friend of poultry generally, whether as living "pets," or smoking as favoured viands on the dining-table, do what in him lies to add his mite to the coffers of the Society.

It is useless to attempt to disguise the fact, that the expenditure annually of this parent institution has, for some few years past, considerably exceeded its revenue; and the deficiency it now labours under calls for "an effort" from its friends. With this brief intimation, then, I will content myself for the present, knowing full well that poultry fanciers are proverbially enthusiastic; and that, as the coming Show will fully equal any one of its predecessors, so most undoubtedly will the amount received at the doors for admission-monies tally in proportion.

I cannot, however, dismiss the subject without looking at the other side of the picture, viz., the expenses hanging so heavily upon this really deserving Society annually. They must be curtailed, for none but those intimately connected with these meetings could form any idea whatever of their extent. I intend to allude exclusively to the first item, and that a most important one—the rental of Bingley Hall itself, being the only suitable building in the town for such a purpose. It amounts to £800 per annum! and this sum is paid for less than one week's public Exhibition. I believe

this amount cannot now be lessened in actual payment; and it is this circumstance that leads me to the effort of suggesting, if possible, some other means of deduction from so serious an outgoing; and through your extensively-read columns, perchance, the subject once introduced, even more valuable suggestions might emanate from other parties more practically conversant with the capabilities of Bingley Hall than is the writer, and who, at the same time, may feel equally desirous to "put a shoulder to the wheel" to help onwards.

During the brief space of time that the Exhibition is open to public view, together with sufficient intervals both for the preparation and removal of all necessary fixtures, of course the Hall would not be available for any other purposes than those originally intended, its extreme space being in constant requisition. I must, therefore, confine my remarks to the whole of the *remainder* of the year, when the Society is not requiring it in any way. Its extent, combined with its being in all weathers perfectly waterproof, and enjoying an equality of light throughout, are features highly suggestive of its applicability to purposes far different to the single one for which it was originally designed. I will confine myself to four such, and trust they will induce more able writers to suggest many others of even greater importance, and yet increased remuneration.

First, as a *Riding-School*. It would form one of the very best that could be imagined; and there are numbers of parties who would willingly rent it for this especial purpose as an "individual speculation."

Once within its walls, all aspirants to the saddle might be instructed without the exposure, even for a moment, of their previous inexperience; and, in case of an accidental fall, the tan and saw-dust already on the spot would prevent any personal injury whatever. There are numbers of parents that would be most happy to encourage such an institution, where this really necessary advantage of becoming experienced riders might be attained by their children (of either sex) without danger or difficulty.

Next, as the site for the *Onion Fair*. It is certain the present Council in possession of the building have a considerable influence with the general authorities of Birmingham, while it is equally notorious and undeniable that the Michaelmas Onion Fair is, *even to a proverb*, usually a wet and unfavourable one. Why not, then, hold that Fair within the walls of this quite sufficiently extensive building, where the esculent that actually gives name to the whole procedure would be perfectly protected from stress of weather equally with the purchasers? No additional trouble would be imposed on the salesmen, as carts and waggons could, as at present, be actually drawn to the very spot where the Onions were to be finally deposited for sale. The ground might, without difficulty, be apportioned within Bingley Hall as it is at present in the exposed streets; and, from the protection afforded, the Onions would eventually keep far better than had they been unnecessarily wetted. The town authorities could not possibly be jealous of such an arrangement, for their "stall rental" might remain as heretofore, whilst the dealers themselves have for years been annually complaining, not only of the insecurity of their commodities, and the inevitable injury to business if rain occurred, but have always stated their perfect willingness to give triple the amount they now pay if the advantages I have thus feebly advanced could be with certainty secured to them.

When it is considered the quantity of dealers who attend this market, the additional and willingly-paid impost would prove a considerable item in deduction of the Society's present expenses, saying not one syllable as to the fact, how much better the Onions would keep when stored by purchasers for re-sale (or winter individual use, as the case might be), than under present exposure.

Again, as *Recreation Grounds* for the juvenile public, what could be better suited than Bingley Hall, being commodious, rain-proof, and centrally situated?

I will yet mention one other application. Why should so great and densely populated a town as Birmingham not have its *Cheese Fairs*? It is well located in the very centre of agricultural counties, highly famed for the production of this necessary and so generally-used article; and, if once attempted, no doubt whatever exists that the amount sold thus

publicly would exceed by far our present anticipations, and that alike to the mutual benefit of the parties negotiating, whether the consumer or the agriculturist by whom it was originally produced.

I have thus freely and in friendly spirit offered my suggestions; they may excite the consideration of others, or promote hints far better than my own, and I trust it may be proved so. Be that as it may, the old axiom, "that even a penny saved is a penny got," is regarded as an undeniable verity by—CHANTICLEER.

THE SOUTHWELL POULTRY SHOW.

THE entries for this Meeting closed on Wednesday, November 19th, and the result has proved most satisfactory, not only showing a large increase in numbers over any preceding year, but likewise embracing the names of the majority of our principal poultry exhibitors. The event is now certain; it will undoubtedly prove a most successful meeting. We are informed, on authority upon which we can rely, that the Silver Cup for the best general collection will be awarded on the principle that, at the late Bridgnorth Show, gave such universal satisfaction. A first prize to count three points; a second prize, two points; a high commendation, one point; and commended, half a point; the aggregate thus obtained to finally determine the ownership of the Plate Prize offered. We cannot do otherwise than approve of this arrangement, by which even the "suspicion" of individual favouritism is altogether rendered impossible on the part of the arbitrators.

GLOUCESTER POULTRY EXHIBITION.

THIS Show, held on the 26th and 27th of November, has proved one of the most successful meetings that have taken place among the many we have lately visited. The East-gate Street New Market, only very recently erected, was most kindly appropriated to the purposes of the Poultry Exhibition by the express permission of the Mayor and Corporation of the city; and certainly we should be indeed wanting in common justice of description if we did not give our highest praise of the suitableness of the structure generally to the purposes of a Poultry Show. It is very lofty, and the ventilation all that could be desired, yet without the slightest drawback from draughts of air of any kind. The pens used were the registered ones of Mr. Cooke, of Colchester, and the arrangements were superior as to cleanliness, whilst the attention paid to the fowls did great credit to the truly indefatigable Honorary Secretary, Mr. Edward Trinder, of Cirencester. The absence of the band of music from the immediate vicinity of the poultry is the only alteration we could have desired, and the advisability of the change will, doubtless, prevent its introduction within the walls on any future occasion. Among the many advantages this Market Hall possesses for the holding of a Poultry Show are an excellent supply of fresh water from a very handsome fountain near the entrance; scales that are of undeviating accuracy; and the light being, as before stated, from the roof exclusively: the advantages, all-important as they are, were pretty equally enjoyed by all the pens of Poultry exhibited. There were but very few classes throughout the whole Show that were not well and fully represented; but a few very prominent peculiarities we will briefly allude to.

The *Dorkings* showed a most manifest improvement over those of previous meetings; and the competition, more especially in the Chicken class, was most severe.

In the Adult class a most noble pen of birds secured the first premium. They were *rosy* combs, but without any approach to coarseness of character. All the *Grey Dorking* chickens were universally admired. A pen of White ones also arrested our attention as unusually good, but manifestly competing to their sad disadvantage when compared with their coloured rivals.

The *Spanish*, whether chickens or old birds, fully upheld the repute of this neighbourhood as to this aristocratic variety.

The *Cochins*, both Buff and Partridge-feathered, were exceedingly good. In the White ones, the "falcon-hooked"

birds mustered strongly, but obtained only second honours; indeed, they are always deemed more notorious for their singularity than their perfection.

The display of *Malays* was far more satisfactory than usually is the case in this really useful but neglected variety.

The most prominent excellence of the Exhibition was, perhaps, found to be in the *Game* classes; indeed, very rarely have they been surpassed anywhere, whilst their first-rate condition was most creditable to their owners.

In the classes for *Hamburghs* a most awkward "mistake" had been made in the prize-list, one set of prizes being competed for by the *Golden-pencilled* and *Golden-spangled* in one and the same class. Exactly the same error was enforced in the *Silver Hamburghs*.

To award premiums to birds so different in their variety, and competing in the same classes, we should deem perhaps one of the most unenviable tasks that could be assigned to any poultry Judge.

The *Polands* of all varieties, also, were general competitors; the Black ones with white crests, however, obtained chief honours, and it occurred to us strongly that some of the best Spangled ones were held back in waiting for the colossal meeting next week at Birmingham.

In the Extra class a pen of very purely bred *Negro* or *Silk Fowls* deserved the attention they obtained.

The *Bantams* were all very superior; and in the *Turkeys* and *Geese* it would be hopeless to wish for better specimens.

The respective weight of the two most distinguished pens we will mention for the information of our poultry friends. *Turkeys*, 54lbs.; *Geese*, 60½lbs. What a truly wondrous improvement on the birds of our forefathers!

In *Aylesbury Ducks* there was almost an equal advancement on those that obtained premiums, as to weight, when compared with the birds that smoked on our dining-tables, say only ten or fifteen years back. We subjoin, for general information, a few of their weights:—24lbs. (*id est*, 8lbs. each); 21½lbs.; 21lbs.; 20lbs.; 19lbs.; 18lbs.; and 16½lbs. It will be thus apparent the excellence was not identical with only a prize pen or two, but universal. The *Rouens* were equally good.

In the Extra class for *Ducks*, the *Labradors*, *Wild Ducks*, and *Call Ducks* of both varieties, were especially meritorious.

It gives us the greatest pleasure to find so extraordinary an annual improvement manifested by the Gloucestershire Society; indeed, it would be exceedingly strange were it otherwise; for the undeviating courtesy shown to all, whether visitors or exhibitors, deserves the highest commendation we can offer. Mr. Edward Hewitt, of Eden Cottage, Spark Brook, near Birmingham, officiated as the Judge, and his awards were satisfactory. Before concluding, we must also mention most favourably the great care manifested by all parties as to the "handling" of the birds confided to them—a most important point in the successful issue of an Exhibition, and which, therefore, we cannot too strongly recommend.

DORKING.—First, Mr. A. H. Leyborne, Popham, Purley Park, near Reading. Second, Mr. John R. Rodbard, Aldwick Court, Langford, near Bristol. Third, the Rev. J. L. Popham, Chilton Rectory, near Hungerford. Commended.—Mr. James Rawlence, Bullbridge, Wilton, near Salisbury. Mr. William Henry Woodcock, Foulstone, near Salisbury. *Chickens of 1856.*—First, Mr. J. Dale Hewson, Coton Hill, Stafford. Second, Mr. Christopher Smith, Great Durnford, near Salisbury. Third, Mr. John H. Braikenbridge, Chew Magna, near Bristol. Highly Commended.—The Rev. E. Reed Davis, Aldsworth Vicarage, near Northleach. Mrs. William Hewer, Sevenhampton, near Highworth. The Rev. George H. Richards, Broad Somerford, near Chippenham. Mr. J. E. Wilson, Clifton Cottage, Claverley, near Bridgnorth. Commended.—The Right Hon. the Earl Ducie, Tortworth Court, near Wotton-under-Edge. Mr. Geo. S. Fox, the Court, Wellington, Somerset. Mr. Thomas Porter, Baunton, near Cirencester. Mrs. Pettat, Ashe Rectory, near Basingstoke. (An exceedingly good Class.) *Best Cock hatched in 1856.*—First, Mr. A. H. Leyborne Popham, Purley Park, near Reading. Second, Mr. J. E. Wilson, Clifton Cottage, Claverley, near Bridgnorth. Commended.—Mr. John A. Braikenbridge, Chew Magna, near Bristol. Mr. Thomas Porter, Baunton, near Cirencester.

SPANISH.—First, Mr. Thomas Twose, Bridgewater, Somerset. Second, Mr. Henry F. Wells, Albion Cottages, Brunswick-square, Camberwell. Third, Mr. William Dawson, Selby Oak, near Birmingham. Commended.—Mr. John Buncombe, Wellington, Somerset. Mr. Bruton Ford, Ide, near Exeter. Mr. John Wright, Hulland Hall, Ashbourne. *Chickens of 1856.*—First, Mr. John R. Rodbard, Aldwick Court, Langford, near Bristol. Second, Mr. J. E. Wilson, Clifton Cottage, Claverley. Highly Commended.—Mr. Parkins Jones, High-street, Fulham, Middlesex. Commended.—Mr. J. Kilvert Bartrum, Richmond Hill, Bath.

COCHIN-CHINA (Cinnamon and Buff).—First, the Rev. Grenville F. Hodson, North Petherton, near Bridgewater. Second, The Misses

Cripps, Preston Vicarage, Cirencester. Third, Mr. C. R. Titterton, Birmingham. *Chickens of 1856.*—First, Mr. William Dawson, Hopton, near Mirfield, Yorkshire. Second, Mr. Henry Tomlinson, 10, Balsall Heath Road, Birmingham. Third, Mr. Charles Punchard, Blunt's Hall, Haverhill, Suffolk. Highly Commended.—The Rev. John E. Yonge, Eton, Windsor.

COCHIN-CHINA (Brown and Partridge-feathered and Blacks).—First, Mr. Brutton Ford, Ide, Exeter. *Chickens of 1856.*—First, the Rev. Grenville F. Hodgson, North Petherton, near Bridgewater. Second, Mr. Brutton Ford, Ide, Exeter. Third, Mr. John R. Rodbard, Aldwick Court, Langford, near Bristol. (A superior class.)

COCHIN-CHINA (White).—First, Mr. John R. Rodbard, Aldwick Court, Langford, Bristol. Second, the Rev. Grenville H. Hodson, North Petherton, near Bridgewater. Third, Mr. Henry Lucas Bean, Ashcott, near Glastonbury. *Chickens of 1856.*—First, Mrs. Herbert, Powick, Worcestershire. Second, Mr. C. R. Titterton, Birmingham. Third, Mr. Henry Lucas Bean, Ashcott, Glastonbury.

BRAHMA POOTRA.—First, Mr. C. R. Titterton, Birmingham. Second, Mr. John Hopkins, Higford, near Shiffnal. Third, Mr. Joseph Hinton, Blaina Iron Works, near Newport, Monmouthshire.

MALAY.—First, Mr. John Buncombe, Wellington, Somerset. Second, Mr. Robert Balfour Stewart, Lydiard House, near Swindon, Wilts. Third, Mr. James Leighton, 183, High-street, Cheltenham. *Chickens of 1856.*—First, Mr. John Buncombe, Wellington, Somerset. Second, Mr. James Leighton, 183, High-street, Cheltenham. Third, Mr. Charles Ballance, 5, Mount Terrace, Taunton. Highly Commended.—Mr. John Buncombe, Wellington, Somerset.

GAME FOWL (White and Piles).—*Chickens of 1856.*—First, Mr. William Dawson, Selby Oak, Birmingham. Second, Mr. Edward H. Strange, Ampthill, Beds. (Third withheld.)

GAME FOWL (Black-breasted and other Reds).—First, Mr. William Buncombe, Taunton. Second, Mr. C. R. Titterton, Birmingham. Third, Mr. William Dawson, Selby Oak, Birmingham. Highly Commended.—Mr. Henry Parry, Wellington, Salop. Commended.—Mr. Francis A. Lavender, Biddenham, near Bedford. Mr. John R. Rodbard, Aldwick Court, Langford, Bristol. (A really good class.) *Chickens of 1856.*—First, Mr. Nathaniel N. Dyer, Manor House, Bredon, Tewkesbury. Second, Mr. William Dawson, Selby Oak, Birmingham. Third, Mr. John Wilson, 1100, New-street, Birmingham. Highly Commended.—Mr. William Buncombe, Taunton. Mr. Ernest Bowley, Siddington House, Cirencester. Mr. Henry Parry, Wellington, Salop. Mr. John R. Rodbard, Aldwick Court, Langford, Bristol. Mr. William Reece, South Parade, Ledbury. Commended.—Mr. James Robert Dutton, Lydiard House, Swindon, Wilts. Mr. John Hopkins, Higford, Shiffnal. (The whole class very good.)

GAME FOWL (Blacks and Brassy-winged, except Greys).—First, Mr. William Dawson, Selby Oak, Birmingham. Second, Mr. Edward H. Strange, Ampthill, Beds. Third, Mr. Frederick George Dutton, Lydiard House, Swindon, Wilts. *Chickens of 1856.*—First, Mr. Nathaniel N. Dyer, Manor House, Bredon, Tewkesbury. Third, Mr. Frederick George Dutton, Lydiard House, Swindon, Wilts. (Second withheld.)

GAME FOWL (Duckwings and other Greys and Blues).—First and Second, Mr. Henry Churchill, Gloucester. (Third withheld.) *Chickens of 1856.*—First, Mr. T. William Pearce, Bromham Road, Bedford. Second, Mr. John Wright, Hulland Hall, Ashbourne. Third, Mr. John R. Rodbard, Aldwick Court, Langford, Bristol. Highly Commended.—Mr. Henry Churchill, Gloucester. Mr. Edward W. Haslewood, Bridgnorth. (A decidedly good class.) *For the best Cock hatched in 1856.*—First, Mr. Nathaniel N. Dyer, Manor House, Bredon, Tewkesbury. Second, Mr. John Lamb, Highworth, Wilts.

HAMBURGS (Golden-pencilled and Spangled).—First, Mr. W. R. Lane, Bristol Road, Birmingham. Second, Mr. J. Kilvert Bartrum, Richmond Hill, Bath. Third, Mr. Henry Thompson, Market-street, Windsor. Highly Commended.—Mr. Walter Hugo, Albert Villa, Mount Radford, Exeter. Commended.—The Rev. Charles J. Down, Semington Vicarage, Chippenham. Mr. John Marshall, Taunton.

HAMBURGS (Silver-pencilled and Spangled).—First, Mr. John Marshall, Taunton. Second, Mr. Walter Hugo, Albert Villa, Mount Radford, Exeter. Commended.—Mr. Edward Archer, Malvern. Mr. J. Kilvert Bartrum, Richmond Hill, Bath. Mr. William Bennett, North Nibley, near Dursley. Mr. W. R. Lane, Bristol Road, Birmingham.

POLANDS.—First, Mr. Thomas Pantton Edwards, Lyndhurst, Hants. Second, Mr. William Gray, Turner's Lane, Eton. Third, Mr. Edward William Haslewood, Bridgnorth. Commended.—Miss Mary Bury, Drayton Villa, Belbroughton, near Stourbridge. Miss E. Steele Perkins, Sutton Colefield, Birmingham.

ANY OTHER DISTINCT BREED.—First, Mr. Thomas James Cottle, Pulteney Villa, Cheltenham. (Black-breasted Red Game Bantams.) Second, Mr. Charles Coles, Fareham, Hants. (Andalusian.) Third, Mr. William Dawson, Hopton, Mirfield, Yorkshire. (Sultan's Fowls.) Highly Commended.—Mr. John G. Attwater, Hallingwood Farm, Cubberly, Cheltenham. (Indian Game Fowls.) Mr. Henry Churchill, Gloucester. (Negro or China Silk.) Commended.—Mr. Parkins Jones, Fulham, Middlesex. (Calcutta Jungle Fowls.) Mr. Robert Balfour Stewart, Lydiard House, Swindon, Wilts. (Silurian Ptarmigans.)

BANTAMS (Gold-laced).—First, the Rev. George Cruwys, Cruwys Morchard Court, Tiverton. Second, the Rev. Grenville F. Hodson, North Petherton, near Bridgewater. Commended.—Mr. Thomas James Cottle, Pulteney Villa, Cheltenham.

BANTAMS.—(Silver-laced).—First, Mrs. Pettat, Ashe Rectory, Basingstoke. Second, Mr. Henry Churchill, Gloucester. Commended.—The Rev. George Cruwys, Cruwys Morchard Court, Tiverton.

BANTAMS (White).—First, Mr. W. H. Holmes, Bridgewater. Second, the Rev. Grenville F. Hodson, North Petherton, Bridgewater. Commended.—Mr. Frederick Watts, Commercial Road, Gloucester.

BANTAMS (Black).—First, the Rev. Grenville F. Hodson, North Petherton, Bridgewater. Second, Miss E. Steele Perkins, Sutton Cole-

field, Birmingham. Highly Commended.—Mr. W. H. Holmes, Bridgewater. (All the class good.)

TURKEYS.—First, Mr. Charles Edwards, Brockley Court, Bristol. Second, Mr. John R. Rodbard, Aldwick Court, Langford, Bristol. (Cambridge Turkey.) Third, Mr. Joseph Wood, Bury Hill, Droitwich. (Cambridge Turkey.) Commended.—Miss Julia Milward, Newton St. Loe, Bath. (French.) *Birds hatched in 1856.*—First, Miss Julia Milward, Newton St. Loe, Bath. (French.) Second, Mrs. W. Hewer, Sevenhampton, Highworth. (Cambridge.) Third, Mrs. Hill, Stretton Grandison, Ledbury. (Norfolk and America.) Commended.—Mr. Charles Edwards, Brockley Court, Bristol.

GESE.—First, Mrs. Hill, Stretton Grandison, Ledbury. Second, Mr. Thomas Hooper, Staunton, near Gloucester. (Irish and Toulouse.) Third, Mr. William Hewer, Sevenhampton, Highworth. (Tockenham.) (An extraordinary class.)

DUCKS (White Aylesbury).—First, Mr. John F. Mortimer, Milestreet, Plymouth. Second, Mr. John Kersley Fowler, Prebendal Farm, Aylesbury. Third, Mr. William Joshua, Perrott's Brook, Cirencester. Highly Commended.—Mr. William Lamb, Purton, Wilts. Mr. John R. Rodbard, Aldwick Court, Langford, Bristol. Commended.—Mr. Brutton Ford, Ide, Exeter.

DUCKS (Rouen).—First, Mr. T. William Pearce, Bromham Road, Bedford. Second, Mr. Charles Punchard, Blunt's Hall, Haverill, Suffolk. Third, Mr. John Marshall, Taunton. Commended.—Mr. John Kersley Fowler, Prebendal Farm, Aylesbury. Mr. John R. Rodbard, Aldwick Court, Langford, Bristol. (A most unusually good class.)

DUCKS (any other variety).—First, Miss Alice Mary Jane Master, the Abbey, Cirencester. (Call Ducks.) Second, Mr. Charles Edwards, Brockley Court, Bristol. (Buenos Ayres.) Third, Mr. Charles Edwards, Brockley Court, Bristol. (Wild Ducks.) Highly Commended.—Mrs. Herbert, Powick, Worcestershire. (Coloured Call Ducks.) Commended.—Mrs. Hill, Stretton Grandison, Ledbury. Mr. Thomas Hooper, Staunton, near Gloucester. Mr. John Marshall, Taunton. (Buenos Ayres.)

ORIGIN OF THE SEBRIGHT BANTAM.

I FEEL sure Mr. Tegetmeier will excuse the liberty I am about to take in expressing an opinion respecting the origin of the Sebright Bantam. I do not wish for an instant to call into account the Polish cross, or his authority, but merely to throw out a hint, that the Poland was used to give the finishing stroke by way of laced plumage. In support of this theory, and for the true origin, I beg to refer him to the old **POULTRY CHRONICLE**.

Volume I., page 407, "H. F." says, Sir John "about forty-five years ago obtained a buff-coloured Bantam hen at Norwich: she was very small indeed, with clear slate-coloured legs. On the same journey he purchased a cockerel rather inclining to red in colour, destitute of sickle feathers, with a hen-like hackle; and also, at Watford, a small hen resembling a Golden Hamburgh." "He afterwards had a white cockerel from the Zoological Gardens, by which he made his Silvers." This description of the origin refers back before the laced marking was achieved. They were then known as Pheasant Bantams.

In Volume II., page 36, another correspondent writes, "Some forty years ago the late Sir John S. Sebright and several other fanciers endeavoured to obtain the beautiful plumage of the Polish fowl on as small specimens as possible," and from this cross the beautiful laced plumage was obtained; so that, according to these accounts (which there is no reason to doubt), Sir John first bred from Nankeen Bantams and a Golden Pheasant fowl (or it might have been a Golden-pencilled hen), and five years afterwards crossed with the laced crested fowl (Polish).—B. P. BRENT.

JUDGMENTS ON POULTRY.

(Continued from page 69.)

GEOGRAPHICAL accuracy was totally disregarded when the fowl that should have been called the "*Shanghae*" received the denomination of "*Cochin-China*," from which latter country I have never yet heard of a single specimen having been imported: Shanghae, on the other hand, is evidently the head-quarters of the breed. Too much stress, I admit, should not be laid upon a mere name, and, when a fowl or other animal has passed by one designation for a long course of years, strong grounds should certainly exist to warrant an alteration; but at the first introduction it is otherwise, and this "*Shanghae*" had good reasons for its recognition, while "*Cochin-China*" was devoid of any claim. An accurate estimate was formed of the points of excellence in this race on their first appearance, and, if we except a fanciful dislike to any markings on the hackle, and a further sacrifice, for a time, of other features for mere colour, progress has been steadily maintained in the same direction.

Probably, however, I should not stand alone in the opinion that as good Shanghaes were found in the early Poultry Shows as appear at the present day; but then, be it remembered, the winners in this class commonly distanced their competitors, as far as, at a subsequent period, some few Spanish and Dorking pens did theirs. The difference is in the class, where few persons are now seen to exhibit faulty specimens, the prolific nature of the breed, and the popular favour with which its introduction was greeted, having dispersed them throughout the length and breadth of the land.

Improvement, I apprehend, is here most distinctly shown in symmetry of form, mere weight having been most wisely deposed to its proper value. Colour, for which so much was once sacrificed, receives the license to which all fowls not being what is technically called "birds of feather" are certainly entitled. Provided, therefore, the plumage is good of its kind, a shade lighter or darker in the several varieties is no very serious matter; but then it must fulfil certain conditions. Buff birds with white or dark feathers are no more admissible than the brown with buff; a mottled appearance, indeed, is always objectionable.

Of Shanghaes collectively I still think that the best examples of the breed must be taken from the Buff class. "Cinnamons" are comparatively scarce, and their merit is probably in a similar proportion. Of "Blacks" I cannot recall a single first-rate pen; while the "White" have had a greater admixture of good, bad, and indifferent than any of the others. "Greys" (for, as the term "Brahma Pootra" is held to signify distinctness of breed, I continue unwilling to employ it), are constantly shown of great merit in all the characteristics of the Shanghae race. Why or wherefore it is still so strongly asserted that they are to stand apart, I am certainly at a loss to understand.

I have endeavoured, without partiality on either side, to recognise their distinctive features or properties; but the result tends only to confirm the impressions that I originally formed. They are Shanghaes by every mark and token that can be employed in the investigation. The Brown and Partridge birds most deservedly stand high in any comparison with others of their family. The type of the breed is eminently well displayed in a large majority of these birds, and, so far as my own experience goes, they are generally not less distinguished for their beauty of plumage than for their merit as layers. Of all that I have ever kept (and all have had their trial), none have given more satisfactory results than these.

No fowls have ever been submitted to closer discussion respecting their value in an economical point of view than Shanghaes; but much misapprehension has arisen from forgetfulness of the circumstance that different strains, and even different birds of the same strain, unquestionably vary in the points that would thus be brought under investigation. This is especially the case with regard to their laying properties. Some are much more given to incubation than others, and this under the same system of management, irrespective of their keep and locality.

"They have had their day, and been found wanting," is by no means an unfrequent remark, but one in which I cannot coincide, where at least reasonable anticipations had been previously entertained. By the latter expression I allude to the recommendations they appear to possess to those who, without rushing into the extravagant expectations that novelty, fashion, and high prices for a time encourage, looked at them as a fowl that was likely to give good returns for certain purposes, and under certain conditions, especially where other poultry were neither likely to thrive, nor could be kept without inconvenience, from their propensity to stray beyond allotted limits. This qualification being understood, what was urged in their favour on these grounds has been borne out by subsequent experience.

For the last two years my own poultry-yard has been mainly given to experiments in cross breeding, chiefly, however, between Coloured Dorkings and Grey Shanghaes. The result has been eminently successful in the production of a good table fowl at a very early age. At first the hens were Dorking and the sire Shanghae; but the error was soon manifest, as the male of the latter was clearly wanting in the form that would constitute a point of merit in his produce. With a Dorking cock, however, and Grey Shanghae

hens; the result has been most satisfactory. In many of the chickens, so long as they lived (for their existence, of course, was doomed to an early close), plumage and form so closely assimilated to the male parent as to justify suspicions that I have sometimes felt, that Dorkings have more than once been exhibited with an infusion of Shanghae blood. It appears singular that, among some forty chickens thus bred, not above two or three had any appearance of feather on the legs, which were of the clear flesh colour of the Dorking.

Malays are a class where more discussion usually follows the Judge's award than in any other department of an Exhibition. Nor is this always without cause, for birds that are comparatively so scarce in a pure state do not afford that opportunity of inspection that best leads to an accurate decision. The peculiar head, erect carriage, elongated form, and close, brilliant plumage of the Malay, are, however, most distinctive features; and for the best estimate of their comparative merits I should look to Dorsetshire for a Judge.—W.

WARNING.

MR. J. M. EATON, the well-known pigeon-fancier, has sent us the letters he received from one W. H. Clifford, 31, Welbeck Street, Charlton-on-Medlock, Manchester. They are very ingenious letters, and succeeded in obtaining from Mr. Eaton a pair of Carriers, valued at £3, and for which Mr. Eaton has never received payment.

OUR LETTER BOX.

GOLDEN-SPANGLED HAMBURGS (*Hamburgh*).—We have no connection whatever now with *The Poultry Book*. The misprint on the plate of "Golden-pencilled" is corrected in the errata.

SHROPSHIRE CATTLE AND POULTRY SHOW OF 1855.—A Winner of Five Prizes at the above Show, which prizes have not been paid, sends us this list of the Committee:—

John Bishton Minor, Esq.
T. Smith, Esq., Stableford.
E. W. Hazlewood, Esq.
Mr. S. H. Ashdown.
Mr. George Gill, Weston.
Mr. Evan Bowen.
Mr. Edward Gough.
Mr. Stephen Matthews.
Mr. George Burr.
Mr. Richard Hill, Golding.
Mr. J. B. Chune.
Mr. H. C. Simpson.
Thomas Jukes, Esq.

John Meire, Esq.
Mr. William Wyley.
Mr. Charles Calcott.
Mr. John Heatley.
Mr. George Cureton.
Mr. Edward Crane.
Mr. Steadman, Bedstone.
Mr. Thomas, Woodbatch.
Mr. W. P. Claridge.
Mr. Thomas Southam.
Mr. Thomas Horton.
Mr. Thomas Groves.

Our correspondent asks, "Could the money be got through a County Court?" and we reply, *Certainly*. Select a member of the Committee who attended its Meetings, and authorized the printing of the prize-list, and have the Secretary as your chief witness. It is a duty to sue those who hold out such promises of prizes, and then break those promises.

RUNT PIGEONS (*C. Fairbrother*).—Go to the Crystal Palace Poultry Show. You will see specimens there, the prices, and who are the owners of the best.

LEG WEAKNESS IN A COCKEREL (*D. G. M'L.*).—The cockerel, who is described as suffering only from an inability to stand, is probably suffering from muscular weakness, the weight of the animal being out of proportion to its strength. Should this be the case a little preparation of iron would act as a restorative. Two grains of the sulphate of iron (green vitriol) will answer; but the citrate of iron is a less powerful preparation, and may be given safely in three-grain doses daily.—W. B. T.

LONDON MARKETS.—DECEMBER 1ST.

COVENT GARDEN.

Markets very well supplied with out-door produce, and a slight improvement in prices has been supported during the week. Hothouse fruits are now confined to *Grapes* and *Pines*, the latter being very abundant for the season, and may be had for 4s. or 5s. per lb. A few parcels of *Pears* have passed through auction, but of very inferior description, and the season for importations of that article may now be considered as drawing to a close.

POULTRY.

There is the usual lull both in the supply and demand, which is observable when Christmas is within a month. The quantity of Hares and Pheasants has exceeded all expectations.

Large Fowls 4s. 6d. to 5s. 0d. each.	Pheasants .. 2s. 9d. to 3s. 0d. each.
Smaller do 3s. 6d. to 4s. 0d. "	Hares..... 2s. 3d. to 2s. 9d. "
Chickens .. 2s. 0d. to 2s. 6d. "	Ducks..... 2s. 9d. to 3s. 0d. "
Grouse 2s. 0d. to 0s. 0d. "	Geese..... 6s. 0d. to 7s. 0d. "
Woodcocks 3s. 0d. to 3s. 6d. "	Rabbits... 1s. 4d. to 1s. 5d. "
Snipes 1s. 3d. to 1s. 6d. "	Wild ditto 10d. to 1s. "
Partridges.. 2s. 0d. to 0s. 0d. "	Turkeys .. 6s. 0d. to 10s. 0d. "
Pigeons..... 8d. to 9d.	

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WEEKLY CALENDAR.

D M	D W	DECEMBER 9—15, 1856.	WEATHER NEAR LONDON IN 1855.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
9	Tu	Greenfinches flock.	30.100—29.956	35—30	N.E.	00	56 a. 7	49 a. 3	4 51	12	7 14	344
10	W	Engis humeralis.	30.079—30.037	35—22	N.	00	58	49	6 24	13	6 47	345
11	Th	Engis rufifrons.	30.033—29.900	33—23	S.W.	00	59	49	rises.	⊙	6 19	346
12	F	Engis ferruginea.	29.885—29.692	33—13	S.W.	00	VIII	49	3 a 55	15	5 51	347
13	S	Nitidula grisea.	30.097—30.015	36—15	N.W.	00	0	49	5 5	16	5 23	348
14	SUN	3 SUNDAY IN ADVENT.	30.015—29.900	49—40	W.	07	1	49	6 25	17	4 54	349
15	M	Anobium tessellatum.	30.222—30.038	48—25	W.	00	2	49	7 47	18	4 25	350

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 46.2°, and 34.3°, respectively. The greatest heat, 61°, occurred on the 13th, in 1842; and the lowest cold, 11°, on the 13th, in 1846. During the period 113 days were fine, and on 83 rain fell.

POLYPO'DIUM ALPE'STRE.



THIS, until a few years since, was unnoticed as a British Fern, apparently because it has the aspect, unless closely inspected, of *Athyrium filix-fœmina*. It has been called *Polypodium rhaticum* and *Pseudathyrium alpestre*; but we know of no other English name than *Alpine Polypody*, a name very appropriate, because it is found only in mountain glens at high elevations.

Root, in its wild state, lying down, much branched, with a tuft of fronds at the end of each branch. Fronds, from one to three feet high, in circular tufts; their stem rather swollen at the base, and only about one-fifth of its length bare of leaflets, this bare part having

a few brown, broad, pointed scales. The general outline of the frond is narrow spear-head-shaped; leaflets alternate, and their leaflets, like the frond, narrow spear-head-shaped, on short stalks, at right angles with the stalk of the leaflet, deeply cut at their edges, and each section sharply toothed; their mid-vein zigzag, and with lateral veins branching into each section, bearing a mass of fructification at the end of one of their branches midway between the mid-vein and edge of the leaflet. Each mass is circular, generally distinct, but sometimes running together.

This Fern was first discovered in the British Isles by Mr. H. C. Watson, who, in 1841, found it on Ben Alder, in Invernesshire, and in Canlocken Glen, Forfarshire. It has since been found on the Clova Mountains by Mr. Backhouse, who observes that *Athyrium filix-fœmina* accompanies it up as high as from 2,000 to 3,000 feet; but from the latter height, up to 4,000 feet, *Polypodium alpestre* is alone.

Mr. W. Reeve informs us that *Polypodium alpestre* is well worthy of cultivation, for, when successfully grown, it is erect, yet elegant. It requires a well-drained compost, composed of fibry peat two parts, and fine loam and leaf-mould equalised to form the other two parts, with an admixture of silver sand and freestone crocks, or some such porous substance, broken very small. The plants in pots must have a good drainage, and be kept moist during the growing season, and gradually dried off and ripened as winter approaches, when they will require a slight protection; to be either shifted into larger pots or deep pans in the spring, or to be parted and placed in smaller pots. If cultivated on rockwork, or in any fixed situation, care must be taken to procure a thorough drainage. In any case, if the drainage is bad, the plant will not thrive. It must be planted firmly upon a shallow supply of the above-named compost. This, with a few pieces of porous stone or old mortar laid about the surface, will be beneficial. It prefers an open situation, but does not like the rays of the sun much. If these directions are followed, and a moderate supply of water given overhead during the growing season, success may be expected. It may be grown well in a greenhouse where it can have plenty of light, and it can be propagated by division.

ON Thursday, the 4th inst., a Meeting of the BRITISH POMOLOGICAL SOCIETY was held at the rooms, 20, Bedford

Street, Covent Garden, Robert Hogg, Esq., Vice-President, in the chair.

The following gentlemen were elected Members of the Society:—

REV. J. G. MILNE, Chignal Rectory, Essex.

JOHN HARPER, Esq., Isham, Wellingborough.

The Society took into consideration the desirableness of offering premiums as an encouragement to the production of new and superior varieties of fruits, the Chairman giving it as his opinion that, considering the present state of the funds of the Society, the Meeting might with safety entertain the subject, and thereby promote the further usefulness of the Society in a way which has not hitherto been entertained. After due consideration of the subject it was unanimously agreed that, considering the number of new Grapes which are now before the public, and that there should be some opinion come to with regard to their relative merits, there should be three prizes given as follow:—

1. A Prize of Two GUINEAS for the best Seedling Grape having a Muscat flavour.
2. A Prize of Two GUINEAS for the best Seedling Grape not having a Muscat flavour.
3. A Prize of Two GUINEAS for any Grape not being a Seedling, but which is little known, and is not in general commerce.

And no prize shall be awarded unless the object exhibited be considered worthy of general cultivation.

Mr. Toyne, of Hounslow, exhibited specimens of a seedling Apple called "Princess Royal." It is a nice, handsome-looking Apple, of a Pearmain shape, and medium size. The skin is nicely streaked with crimson, and the flesh is tender, and of a good flavour; but as it exhibited no characteristics which were equal to many other varieties already in cultivation, the Meeting did not recommend it as a desideratum.

Mr. Ingram, of the Royal Gardens, Frogmore, sent specimens of some new seedling Apples raised by him. They were exhibited under numbers, and not under names. No. 74 is a handsome little Apple, with a skin very much like the Golden Harvey. The flesh is firm and crisp, very juicy, and briskly acid, but deficient in sugar and aroma. It has a slight anise flavour, but very faint. It is an Apple that many would like, and it appears to be one which will keep till late in the season. The Meeting requested that specimens may be sent to the February Meeting, when the acidity may be more subdued. No. 87 is of very ordinary merit. No. 114 is tender-fleshed, and not sufficiently juicy, being rather mealy; but this, no doubt, arises from being kept beyond its season. It is very sweet, rather too much so, there being a deficiency of acid. No. 71 is a handsome-looking Apple of a fine yellow colour, but of inferior flavour. It was said to be "a late Golden Pippin. Tree remarkably strong, and exceedingly prolific." Mr. Ingram also sent specimens of *Coxe's Orange Pippin*, a first-rate Apple. It is of the medium size, and of a handsome oblato-ovate shape. The skin is considerably covered with brownish-red, over which there are patches and tracings of good, hard, thick russet. Where shaded the colour is greenish-yellow, marked with a few broken stripes of very pale crimson. The flesh is yellowish, remarkably tender and juicy, with a fine Ribston flavour. We have rarely met with a finer Apple. Another Apple, called *Small's Admirable*, was also exhibited from the same collection. It is large, and of ovate shape, tender-fleshed, and with

a pleasant sub-acid flavour. This cannot fail to be a good culinary Apple.

Two seedling Apples were exhibited by Mr. W. Barratt, of Wakefield, which had unfortunately been frozen, and, being packed in wheat chaff, the flavour of it was communicated to the fruit, both circumstances rendering them perfectly worthless. A collection of Apples which Mr. Barratt sent was also frozen, and worthless as regards flavour.

Mr. Powell, of the Royal Gardens, Frogmore, sent specimens of *Nelis d'Hiver* and *Bonne de Malines* Pears, showing that the opinion expressed by the Horticultural Society's Catalogue, that these two varieties are synonymous, is incorrect. Specimens of the young wood and spurs were also exhibited, and there could not be the least doubt as to the distinctness of the two varieties. The fruit is somewhat similar to the eye; but, while the *Nelis d'Hiver* which were shown were perfectly ripe, the *Bonne de Malines* were quite hard, and exhibited no appearance of ripening. Both varieties were grafted on the same tree, and grown against a wall, so that both were produced under the same circumstances. There can be no doubt at all that the two varieties exhibited are perfectly distinct, and the question just arises, If the Horticultural Society's Catalogue be correct—and it generally is—what is the *Bonne de Malines* which Mr. Powell sent? This is a subject worth investigation, and no doubt Mr. Powell will afford the Society all the information in his power to come to a correct decision on the matter.

Excellent specimens of *Black Hamburgh Grapes* were exhibited which had been ripened out of doors at Heath, near Wakefield, the residence of Mr. Reynolds. They were quite sweet and sugary; some of them had shrivelled, and begun to assume the appearance of raisins.

The Meeting then adjourned till the first Thursday of February.

EXOTIC NURSERY, KING'S ROAD, LONDON.

(Continued from page 127.)

To the principal climbers in the entrance-lobby, with which I closed the first account of this Nursery, add, that *Clematis Sieboldi* is to be planted against the same pillar as the *Blue Passion-flower*, as was done and answered so well on the conservatory wall at Shrubland Park. The two should always go together; and, when *Solanum jasminoides* is grown too much for the space allotted for it, or when neighbouring climbers fill their spaces, which the *jasminoides* will fill till they do, the *Rhynchospermum jasminoides* will take the place of the "Tree Potato," as requiring so much less room; but, for cut and come again, we have no climber like this kind of *Solanum*. The following were the principal plants in this lobby, which is thirty-eight feet by eighteen feet:—A fine large match pair of *Chamærops humilis*, the dwarfiest of the Fan Palms, and the one of all the Palms which flourishes farthest north in the old world; four handsome vases with two match pairs of *Dracæna indivisa*, or *Charlwoodia indivisa*, or, which is the true name, *Cordyline indivisa*, a native of New Zealand, and an excellent front-hall or lobby and terrace-garden plant. Another noble match in two standard *Sweet Bays*, as you may have seen at the Crystal Palace. These are above five feet in diameter, and three feet the other way, and with clean, clear stems about thirty inches high; and there are many more pairs of the same stamp and kind out in the grounds in tubs. There seems to be a great demand for these as substitutes for out-door Orange-trees. They are imported from France by several of our first-rate nurserymen, along with standard Laurestinus, Pomegranates, and Myrtles. The next finest pair was of these very Laurestinus, the finest

plants of the kind I ever saw, the stems about thirty inches, and the heads full four feet across, and in one mass of blossom-buds; no end to standard Myrtles, from a size for children's gardens to that of a duke; Oranges the same, some of the five-foot size being very fine, and closer in the heads than you often see them in private collections; *Aralia trifoliata* seven feet high. These, with various hybrid Rhododendrons in good bud for early house bloom, complete the lobby, as they call this house; but I called it the vestibule, which is a more classical name. On the left of the vestibule is the greenhouse wing, which is twenty-eight feet by eighteen feet. The first pair here is of the Norfolk Island Pine, *Araucaria excelsa*, six feet high (just a comfortable height to begin with), and an odd one a little higher; then a pair and an odd one again, to get the odds to match. There are *A. Bidwillii*, three feet, and *A. Cunninghamii*, five feet; then a pair of *Stenocarpus Cunninghamii*, the old *Agnostis sinuata*, and one of the very best of the good old plants from New Holland, but which no one in Europe has yet flowered except Mr. Weeks, of this same King's Road; *Aralia trifoliata* and *Podocarpus taxifolia*, a good match in height of three feet, in rarity, and choice, though at extremes in the leaves; a pair of Australian Dragon-trees, four feet (*Dracena Australis*); an odd *D. indivisa*, five feet; one *Lomatia ferruginea*, three to four feet; lots of Chrysanthemums in bloom; also of the *Catalonian Jasmine*, as at Clapton; and, what would you think next? Just this—all the pillars planted with *Lapageria rosea*. The roof and columns are to be covered entirely with this one climber, and, if that will not push it into the farthest-off corner of Europe, why we must.

The right-hand wing is of the same dimensions, and is devoted to stove plants of a high order of merit, beginning with the China Rice Paper Plant (*Aralia papyrifera*) in full bloom, much in the way of those we already knew of them; a collection of their best specimens of eight kinds of *Dracena*; a pair of *Musas*, *Cavendishii* and *zebrina*; several beautiful young Palms, such as *Plectocomia elongata*, *Demonorops asperima*, *Corypha australis*, another of the Fan Palms, and others of that style; plain and variegated Screw Pines (*Pandanus*) of great beauty of foliage; *Ficus panduræfolius*, a garden name for *F. puberula*, a recent introduction from India; a very fine *Maranta vittata*; the noble-leaved *Urania speciosa*; a newly-introduced *Encholirium*, called *Encholirion Jonghi* here and at the Clapton Nursery. This has not yet flowered in Europe; but a dried flower-stem, which was sent with the plants by M. de Jongh's collector, is said to have been a yard long. From this and the position of the genus among *Bromeliads*, between *Dyckia* and *Pourretia*, together with the meaning of the name by Dr. Martius, it is believed to be a first-rate plant. The proper name is *Encholirium*, from *eggnos*, pregnant, and *leirion*, a lily. It came to England this season, and deserves well to be remembered. If it is as good as *Vriesia* or *Æchmea*, which it somewhat resembles in growth, it will assuredly be as easy to grow, and become as great a favourite. *Sonerila margaritacea* in bloom; and also in bloom that beautiful new bulb which I told about more than once, the lovely *Eucharis* (accent on the u) *Amazonica*, which is more stately than *E. grandiflora*, which it resembles in the ivory whiteness and shape of the flower. There is a large stock of it here ready to bloom, and it seems to bloom at all seasons. *Eucharis* here means, "to love beauty." Several variegated Pine-Apple plants, one of which is in fruit in another house, with lots of other good things. The climbers for this house are *Passiflora princeps*, or Scarlet Passion-flower; *P. Bonaparteæ*, one of the freest to bloom of the *quadrangularis* section; *Allamanda Schottii*, *Bignonia grandiflora* (not *Tecoma*

grandiflora), and *kermesina*, the very best of all the Passion-flowers.

In the entrance to the long corridor, from the front range to the large conservatory, a glass case on the left contains specimens of the wood of various Conifers, together with cones of such kinds as *macrocarpa*, *Sabiniana*, *Lambertiana*, *Araucaria Cookii*, *Wellingtonia gigantea*, *Picea bracteata*, *nobilis*, *grandis*, and *amabilis*, and *Torreya myristica*, with others that are better known. Opposite to this stands another glass case, containing dried specimens of the branches of *Torreya myristica*, a new species of Yew from Oregon; *Wellingtonia*, *Libocedrus decurrens*, perhaps the best of that genus; *Pinus macrocarpa* and *muricata*; *Picea grandis*, *nobile*, *amabile*, and *bracteata*, and others. There are also drawings of many of the more rare kinds to help the judgment, and so open the purse with more confidence. The different kinds of money mixed in a compost, with good *drainage*, is the best thing in this world to make plants go the right way.

Next to these stands a collection of different kinds of vases; and pray look at a new style of vase for growing bog exquisites in the front hall, with a glass down over them—quite a new fashion, and the best of all the new ones. The centre of the bottom of this vase is raised an inch or two, according to the size, so that an inch or two of water rests on the bottom before any escapes by the drainage-hole; or a lead pipe, two, three, or more inches in length, might be put into an old vase, and made watertight at the collar, so as to have the depth of the pipe always full of water. Then fill the vase thus:—Take the thickest and most fibry peat turf, and cut it into squares; put a row of these on edge at the bottom of the vase, and one inch of moss between each of them, and between them and the vase another row of smaller squares crossways over the first; moss again, and so on to a coned centre, diminishing the lumps as you rise. On the top and sides of this cone all sorts of Sun-dews, Bog Ferns, and goodness knows how many more kinds, will grow with astonishing vigour without ever being watered from above. The bottom being so much in water, the moss sucks it up, and gives it off to the peat so gently and so uniformly that no plant which has a liking to a stream, lock, or "murmuring brook," can refuse to put up with the indulgence of a glass house inside the big house. All the Sarracenias and other short Pitcher Plants might thus be grown if we had but a good solid name for the contrivance.

The corridor was full of the best half-hardy plants for setting off a winter conservatory, and others, the more prominent of which were as follows:—*Bonaparteæ filamentosa*, an elegant improvement on *B. juncea*, the most classic-like plant in England to follow architectural ornament in terrace-gardens throughout the whole of the summer months; a pair of *Agave filifera*. These are dwarf Aloes, to which the last remarks square to an eminent degree, nothing being generally so ill understood as the proper decoration of terrace-gardens. Flowers under this rigid system are like good music without accompaniments. A pair of *Yucca calyculata* to match crossways with the Aloes, then a change; a pair of *Dammara*s, four feet high, a new kind from North Australia; a very dissimilar pair of *Chamærops gracilis*, followed by a pair of *Araucaria Bidwillii*, three to four feet; a pair of *A. Cunninghamii*, and an odd one behind. Among these were several pairs of Variegated Yuccas, one pair being well nigh five feet in height. A single specimen of *Eugenia Ugni*, four feet high, and a yard across the head. This was paired with a beautiful plant of about the same size as *Araucaria Bidwillii*.

Take particular note of this pair, and learn the pairing on that system; also the following one, *Torreya Humboldtii*—not a Tory recollect, but a Dr. Torrey. This is a light green *Taxus*, or Yew-like plant,

from Mexico, in 1848, and is now six feet high, matched with Lord Dalhousie's—or Dalhoosy, as they pronounce it in Edinburgh—namesake Rhododendron, a little taller than the American Doctor's tree, and with forty flower-buds on; then a rich match pair of *Dammara Brownii*, five feet high. Those *Dammaras* are splendid house-plants—broad-leaved Pines or Conifers. The accent is on the first *a*; the name the native one for these trees. These were followed by evergreen *Berberis*, of sorts, such as *Bealei* and *intermedia* from China; *Japonica* from Japan, the home of all the *Japonicas* you hear about; and *Leschenaultia* from the south of India, on the Neilgherry range; all fine-leaved kinds. The next were the *second* best matched on the establishment, and you will guess the best when I say this was the male and female *Cephalotaxus Fortunei*, four feet high; then pairs of *Yucca*, *Chamærops* of sorts, *Araucarias* aforesaid, the different kinds of dwarf Oranges in pairs. Little stands of the Myrtle-leaf Orange were extra; a pair of *Yucca quadricolor*, very extra, four shades in the striped leaves, and one broad band up the centre of each leaf; an extra *Araucaria Cookii*, full five feet high; and an extra newish form of the Norfolk Island Pine, called *glauca*; the last pair being the gouty *Dasyliirion serratifolia* (*dasys*, thick; *leirion*, a lily), a close relative to the new *Encholirium*, alias *Encholirion* of nursery lists. All these matches, with the different kinds of smaller or more common kinds which made up the rest of the plants, made both sides of the walk down the corridor as evenly balanced to the eye as if they were weighed in scales. The very same effect is produced on the eye, and through the eye to the mind, when the colours in a flower-garden are properly balanced; and there is no other way of accounting for the improved taste for plants of fine growth and foliage without flowers. It is the forms, the regularity of well-grown plants, and the beautiful outlines or forms they then assume, which tell on the eye; but place the very self-same plants, or the very self-same colours, differently, and you may have nothing better than pigs with one ear, squinting and squealing till they make the very teeth gnash in one's head.

The large conservatory with a domed roof—such roofs being the climax of the folly of the last age in plant-houses—stands east and west across the vista, through the vestibule and corridor; and in the centre, where the fountain played in Mr. Knight's time, stands the finest specimen in the trade of *Cordyline indivisa*, commonly, but most erroneously, called *Dracæna indivisa*. The *Dracenas*, or Dragon-trees, are all natives of the tropics, chiefly from the Indies and Mauritius; while the *Cordylines*, or Club-trees (*cordyle*, a club), are all natives of temperate latitudes, and chiefly from New Zealand. This *Cordyline* is full six feet in the stem, and a wide-spreading head in proportion, quite an architectural plant. Right and left of it, in the line of the centre, is an iron column supporting the roof. The front, back, and the chief parts of both ends are solid brickwork up to the springing of the roof, and there is a wing at each end of it, entered by glass doors in the centre; thus there are two broad open spaces crossing each other in the centre, and dividing the conservatory into four great quarters or quadrants, each of which was devoted to a Tree Rhododendron in the first instance; but they never did much good, for flower they would not. I only recollect to have seen one really “good blow” on them, about eighteen years back, when they were under the management of our friend Mr. Kidd, the Love-Apple grower. The way he effected his purpose was kept a deep secret at the time. I then lived close to London, and knew all the moves but this one, of which I got hold many years after. He got an iron rod with a sharp end, and made two circles of holes in the balls; the first circle was as near the stem as he could push in the rod, and the next

half-way to the sides of the tubs, and which reached down to two-thirds of the ball. These holes he kept full of water, while the great Rhododendrons were making their annual growth, and until the flower-buds were set. That is only historical now; but the fact may be of use yet to those who have large old specimens in pots or tubs which do not bloom as they ought, owing to the balls getting too dry during the rest season, and then resisting the ordinary waterings on the surface. All the stages are high enough to allow of the new fashion of whaleboned dresses to walk along without drawing down pots and plants in the train, except in this large conservatory, where a row of pot Rhododendrons for forcing is placed all round the four great quadrants, and another row of *Kalmias* in front of them for the same purpose; but yet there is room enough left for all conscience, and for whalebone to boot; and the effect of these two rows of temporary plants is rich in the extreme, each quadrant being filled up with the finest kinds of Camellias in large specimen plants, and as full of bloom-buds as ever any plants of the kind could be. Out of sight, behind these, are beds against the walls, in which Camellias of sorts and different kinds of Acacias are planted out for “good,” to be trained against the walls; but, if I had a new conservatory to fill, I would insist on getting up all these ready-trained plants for my “good,” only I must pay the piper according to the tune; but if money makes the mare go, why not a “go” at these very things in these going times?

Tacsonia mollissima is planted against one of the supporting iron columns, which is to be inarched with *T. manicata* up at the cross-bars which tie the roof. The other column is planted with *Habrothamnus elegans*, which was in bloom on the 1st of November, when I called. This is an elegant plant, as the name says, and is not unlike *H. fascicularis* in the bunches of flowers, and is very different from another kind, which often goes by the same name, on the south-side walls, which have a north aspect. *Tacsonia pinnatistipula* is to be planted to flower more in the shade, as it must either be in the open air or in such a situation in-doors to do much good. Mrs. Marryatt's conservatory at Wimbledon has taught that plan long since, and yet it was the cause of a most unwarrantable prejudice against that most beautiful climber. In that old, dark, large house this *Tacsonia* fruited as freely as a Ribston Pippin in the orchard; and the London trade was so easily supplied with seeds from that house, that for some years there was not a plant of it on sale but a seedling; and seedlings took such a very long time to flower that most people thought the plant a shy bloomer, whereas it is well known now to be the easiest of all the Passion-works to deal with, with the above limitation. Ten degrees of frost do not stop it from blooming, as I can vouch for from my own experience.

I purposely left a few specimens behind for this point in the story. The first of them is *Solanum pseudo-capsicum* trained to a single stem and a round head, to represent an Orange-tree in miniature. It was a favourite plant here in Mr. Knight's time. The small, round, Orange-looking fruit holds on all the winter, and makes it a useful plant in that season, notwithstanding its being in other respects only an ordinary old plant.

The next is an Aloe of some rare-kind-looking plant, which is in the stove wing of the front range, and named *Pincineetitia tuberculata*, a very fine specimen. I had seen the same kind at Kew this autumn when I called with Mr. Kinghorn, but did not look at the name there. The name is all I wish to allude to now, however, and that to say, that it is not to be found in any authentic book on genera that I have access to. The best of them all is one which was published last year in Berlin, and of which a presentation copy was sent to

the library of the Horticultural Society; and it strikes me that if this name was at all authentic it could not have escaped the eagle eye of the author of that book; therefore, although a reporter might give the name as it stands, a reviewer ought certainly to look more under the surface, and not pass over things so easily, and for the present I put it down as a nondescript, but a fine plant; and the best is *Rhodolina Championi*, a fine evergreen plant from the Camellia districts in China. It has been here since 1850, and is to be seen in every good collection; but no one knows how to bloom it, or if it has come to a flowering age yet, the plants being all from seedlings. Every one tells you that it is like a Camellia, and requires the same treatment, and that seems to me a bar to its right management. It is not like a Camellia more than *Gloire de Rosamène* Rose is like one, and its nature is as wide from that of a Camellia as the poles are asunder. It is of the Witch Hazel tribe (*Hamamelidaceæ*); there are no petals to the flower; the guard-calyx is a double involucre, the inner one being as fine a rose colour as any of the Roses. In size and shape it is much like a single Camellia, but the nature is quite different; and may not that be a hinderance to its flowering? I think it makes all the difference, and that the plant must be treated very differently before we know the right way of flowering it. February is the time it blooms in the south of China; therefore it must be one of those plants which form their flower-buds the previous autumn; and, like many of that class, the over-excitement of high summer growth may run the flower-buds into wood-buds, as often happens with Chinese Azaleas and many of our own hybrid Rhododendrons. If these were not checked at the proper moment, we all know how prone they are to make a second growth, which does away with the flowering next spring. I am very firm in the opinion that that is the way with this plant; people believe that it is like a Camellia in nature as it is in looks. That not being the case, however, it is as likely as not that we overdo it by too much summer growth; and I would advise a change of system, say to watch it about the end of May, or early in June, when the *first growth* is nearly finished; then to prevent a Midsummer growth by turning it out of doors fully exposed, and to keep it short of water till the end of August. There is no question but the plant is as hardy as the double white Camellia, for it was found growing with wild Camellias by Captain Champion, after whom it is named. It would most probably graft on the old Witch Hazel of Virginia, *Hamamelis Virginica*, an old and much-neglected hardy shrub; and if so, that may be another means of getting it sooner into bloom. At all events, these or similar modes ought to be tried with it, for it is really a fine thing, and, no doubt, might be had in bloom here all the winter, like the Camellia. The Camellia-house ought to be the right place for it after it is up to a good size, if not from the seed-leaf; and the stove will be the very last place to bring it into flower.

D. BEATON.

PLANTS THAT MAY BE IN BLOOM IN OCTOBER.

GREENHOUSE PLANTS.

ADESMIA viscosa; *Arctotis decumbens*; *Balsamina latifolia*, *latifolia alba*; *Balsams*, garden; *Bauera latifolia*; *Blandfordia intermedia*; *Browallia*, various; *Brugmansias*; *Chironia linoides*; *Calceolarias*, shrubby kinds; *Drimia altissima*; *Disporum vulvum*; *Dumasia pubescens*; *Dyckia altissima*; *Echeveria coccinea* and *grandiflora*; *Erica pulchella*, *cerinthoides*, *acuminata*, *aurea*, *exsurgens carnea*, *exsurgens major*, *exsurgens grandiflora*, *vestita coccinea*, *sulphurea*, *pulverulenta*,

pyramidalis, and most of those of last month; *Fuchsias*, many; *Habranthus Bagnoldi* and *pumilus*; *Habrothamnus elegans*; *Hindsia longiflora*; *Leonotis leonurus*; *Lightfootia subulata*; *Leucocoryne odorata*; *Malva campanuloides*; *Manulea viscosa*; *Mesembryanthemum serrulatum*, *minutum*, *surrectum*, *tigrinum*, and *taurinum*; *Nerine Sarniensis*; *Othonna virginea*; *Oxalis ambigua*, *carnosa*, *Bowiei*, *cruenta*, *hirta*, *macrostylis*, *pectinata*, and *purpurea*; *Passiflora Colvillii*, *cærulea*, and *racemosa cærulea*; *Pelargoniums*, of *Unique* and *Nosegay* varieties; *Roella spicata*; *Salvia splendens*; *Statice Halfordii*, &c.; *Solanum Tweedianum*, *vestitum*, and *jasminoides*; *Stenochilus viscosus*; *Tacsonia mollissima*; *Thea Bohea*; *Volkameria aculeata*; *Westringia triphylla*; *Witsenia corymbosa*; *Xanthoxylon piperitum*; *Zygophyllum album*, *cordifolium*, and *maculatum*.

STOVE PLANTS.

Æchmea fulgens; *Ardisia acuminata*; *Allamanda neriifolia*; *Abroma fastuosa*; *Aganosma caryophylloides* and *Roxburghii*; *Aspidistra elatior*; *Begonia nitida*, *parvifolia*, *fuchsioides*, &c.; *Billbergia purpurea*; *Bromelia bracteata*; *Centroclinium reflexum*; *Clerodendrum*; *Clitoria Mexicana*; *Crinum humile* and *insigne*; *Cypripedium venustum*; *Dichorisandra thyrsiflora*; *Duranta Plumieri*; *Echeveria racemosa*; *Euphorbia Bojeri*; *Gesnera zebrina*, *elongata*, *Gerardiana*, and *sceptrum igneum*; *Gloxinias*; *Hamiltonia suaveolens*; *Ipomæa grandiflora*; *Justicia speciosa* and *flavicomma*; *Malvaviscus pilosus*; *Melastoma sanguinea*; *Niphæa rubra*; *Oldenlandias*; *Passiflora alata*, *princeps*, &c.; *Pilumna laxa*; *Pleroma Benthamiana*; *Ruellia formosa*; *Siphocampylos macrostemma*; *Tabernæmontana odorata*; *Teucrium inflatum*; *Thunbergias*, of sorts; *Torenia Asiatica*; *Stapelia anguina*; *Tillandsia nitida*; *Tradescantia zebrina*; *Vernonia fruticosa*, *linearis*, and *odoratissima*; *Vriesia glaucophylla*; *Whitfieldia lateritia*; *Xiphidium giganteum*; *Xylophylla speciosa*; *Zygophyllum cordifolium*.

For general remarks, as applicable to small houses, see p. 128. Plant-houses hardly ever look better than during September and the first three weeks of October. If climbers are allowed to grow freely, such as the *Passion-flowers*, &c., they themselves would make a house look beautiful and interesting, with a few other plants, where there are openings and sunlight for them. *Balsams*, from seed sown in a cold frame or pit towards the end of May, and grown on with abundance of air, make a fine show in a cool greenhouse in the beginning of this month, and make less litter than at other times, from seeding less easily. Neat little plants of spring-struck *Fuchsias* are just in their element; and what could yield a prettier blue and white than bushy plants of the *Browallia*, from seed sown in a slight hotbed in April? For yellows and browns nothing could exceed masses of shrubby *Calceolarias*, that were either grown in pots, or, better still, planted out in a border at the end of May, and raised towards the end of September, every flower being removed until the middle of August. Unless the house is kept cool and airy, *Heaths* and *Epacris* will be best in airy, cold pits until the middle of the month, and even until the end of it, and the first part of November, if the Chinese *Chrysanthemums* are to be introduced in great numbers.

Unique Geraniums, and *Scarlets*, and all of the *Nosegay* kinds, will just be in their element, if grown on during the summer, and the flower-buds removed until August. *Salvia splendens* will also be in fine trim from cuttings struck in April, and either grown on in pots or planted out in June, and raised carefully and potted in September.

If the greenhouse is kept at all warm and close, *Gesneras*, *Begonias*, and *Clerodendrums* will just be at

home there during three parts of the month, and will thrive better than in a warmer and closer plant stove.

Two things must be attended to in the case of a greenhouse after the middle of October. The first is a gradual thinning of the climbers and danglers from the roof, in order to give more light to the plants on the stages; and, secondly, the determination must be come to, whether the greenhouse is to be chiefly a preservatory during winter, or a place where as much bloom as possible can be kept and exhibited. In the first case, in severe weather you will be safe with an average temperature of from 35° to 40°, with a rise from sunshine, and air when possible. In the latter case the temperature should range from 45° to 50° and 55°, with a rise from sunshine, and a careful regulation of air.

In the first case all tender plants should be removed by the middle of October, and you will have a house just suited for hard-wooded plants, such as Camellias, Epacris, Heaths, &c., especially when not in bloom. When coming into bloom they will open best in a medium between the extremes named. For a house to be well stored with bloom in winter the temperature should seldom be lower than from 45° to 50°. In a large house, therefore, the expense of a few extra tons of coal will make a great difference as to appearance in the winter months, and the presence of many flowers then in a mixed collection devolves on the gardener a constant watchfulness, and the necessity of placing his plants in groups, that he may treat them more according to their necessities; all soft-wooded plants, as a general rule, requiring a higher temperature, and a moister, closer atmosphere than those which are hard-wooded.

Supposing, then, that here is a house that is to have a quantity of Heaths and Epacris and Camellias to bloom in winter, but that in the month of October it is still gay with creepers, with Balsams, Begonias, Clerodendrons, &c., that require considerable warmth and closeness of atmosphere at that period, then it would be advisable to give as much sunlight and air as possible to the Heaths in the cold pits, and keep them there until all those plants were removed from the greenhouse, and the climbers pruned and regulated for the winter. If a great quantity of Chrysanthemums are to be introduced at the end of the month, then, though a similar temperature and amount of ventilation would suit them and the Heaths, &c., yet if the Heaths, &c., were safe in the cold pits, or there was the means of throwing a little heat into them by a hot-water pipe, so as to keep the air in a constant motion, and prevent it being stagnant and moist, then it would be best to keep the plants there until all such ephemeral, soft-wooded things as Chrysanthemums are removed from the greenhouse.

But, on the other hand, if there are no tender things in the greenhouse, and but few Chrysanthemums are to be introduced, and these in a group at one end, then, as the Heath is never more subject to mildew than in cold pits in autumn, I would move them, Epacris, and Camellias, &c., to the house in the middle of October, after it had received a thorough cleansing; because, as a general rule, every plant will do better in late autumn, winter, and spring, upon the open shelf or stage of a greenhouse than in a pit; because, in the former, the light and air play freely all around them, while, in the latter case, they act chiefly on the upper surface of the plant. There is no disease or ailment so prejudicial to the Heath as mildew, and nothing promotes it more than a stagnant, moist atmosphere, as most of those who have tried to winter Heaths in common cold pits have found to their cost. It is not so much the cold of winter that is to be dreaded, as its moist fogs, when all the air you can give is but little better than dredging the plants in a cold shower-bath, and no chance of drying them until you have a clear, frosty day, and then the air is very likely as arid as it was moist before, and the plants thus

suffer from extremes. A hot-water pipe or a flue would do much to remedy this, because all stagnation in the atmosphere could be prevented. It is chiefly because the Epacris is not subject to this mildewing that I recommend the whole genus for mixed collections in preference to Heaths.

The same preparations are necessary in a stove in October as in a greenhouse. Climbers that have been grand during the summer, and which were allowed to spread about almost naturally, must now be thinned out, to admit more light to those plants that have been summing in the greenhouse, or rustivating in cold pits, kept rather close and moist. By the end of the month the climbers must be reduced very much, and the pruning will not only be of advantage to the plants beneath them, but the climbers themselves will come all the more vigorous next season. Directions as to the pruning of these climbers have already been given. In taking back the plants into the house, after it has received a good cleansing about the middle of October, the tenderest plants should be taken care of first. Among others the beautiful *Euphorbia Jacquiniflora* should be housed in the stove by the 1st of October, and in cold autumns a week or two earlier. Nothing tends to weaken the beautiful wreaths of bloom, lessen the brightness of their colour, and even cause the leaves to fall off, than allowing the roots to get chilled from standing too long in a greenhouse or a cold pit. The *Poinsettia pulcherrima* is hardier, and may generally stand in a cold pit, well exposed to the sun, until the middle of October; but, in a cold night, a covering should be thrown over the glass even at that time, as small, instead of large-bract crimson leaves, I have traced to the points of the shoots being nipped with cold, even when the leaves seemed all healthy. A chilling at the roots will also produce the same result. From reasons such as these fine stems and thriving, prominent buds have frequently produced bract-leaves two or three, instead of from seven to ten inches long. Need I say that everything about the stove-heating medium, walls, &c., should be thoroughly cleansed in October? Most of the genera alluded to have already received attention. I regret that such general remarks are rather too late; but I will endeavour to give a short chapter of things to be thought about in December, and thus bring up our lee-way.

R. FISH.

CULTURE OF THE EXOTIC HEATHS.

(Continued from page 146.)

INSECTS.—Happily very few insects infest these charming plants. I have seen very old specimens with a considerable number of the scale insect on their branches; but such old plants so infected are scarcely worth the trouble of cleansing. The best plan is to throw them away, and to procure young plants of the species. The green fly in spring sometimes settles upon the young tops. These are easily got rid of by filling the house or pit with tobacco-smoke, syringing them severely the following day to wash off the dead flies, and cleanse the leaves of their exuviae.

DISEASES.—The mildew is the worst disease to which Heaths are subject. It is greatly increased by a close, long-continued damp atmosphere. In such a state of the air, if one plant only is affected the mildew spreads with fatal rapidity. The soft-leaved varieties, such as *Erica sulphurea*, *E. propendens*, and *E. Willmorei*, are the most subject to it. The only cure is first to dry the air as much as possible, then damp the leaves of the infected plants, and dust them over with flowers of sulphur. If only one or two are infected, remove them into another pit or frame, dust them with sulphur, and, when the mildew is killed, syringe the sulphur off, and replace

the plants where they were taken from. When I have had two plants of a kind, and one only affected, I always thought it best and safest to cast away the diseased plant. Prevention, however, is better than cure. The mildew may be prevented by drying the atmosphere with a little fire heat, and giving abundance of air. If the plants stand too thick on the stage, and a long-continued rain occurs, the mildew is almost sure to appear. Watch that first appearance, and check it by using sulphur, drying the air, and setting the plants thinner. In pits these applications are somewhat difficult. To dry the air in a pit, I have, some fine day, had all the plants out on the walks, and a quantity of very dry coal-ashes laid on the floor of the pit. I also white-washed the walls, mixing sulphur amongst the lime. By using these precautions I generally kept my Heaths healthy and clear of mildew.

Heaths, as every grower finds to his sorrow, die off suddenly without any apparent cause. I know of no cure for this fatal disease. The only thing to attend to is to take care that they are duly supplied with water. I believe this disease comes through an irregular or insufficient supply of that necessary element. I have frequently turned out the ball of earth, broken it up, and found the centre quite dry, the roots in the moist part alive, but close to the stem quite dead. Let the grower, then, pay particular attention to this point of giving a proper supply of water, and then he may expect that his Heaths will continue healthy for many years.

PROPAGATION BY SEED.—There are several varieties and species of Heaths that are extremely difficult to propagate by cuttings. Many of them, however, happily produce good seeds; therefore the grower should gather the seeds of such. Their ripeness may be known by the capsules turning brown, and opening at the top. Gather them carefully, and lay them on a large sheet of paper exposed to the sun, but not where the wind will reach them. A very few days of sunlight and dryness will cause all the capsules to open, and the seeds to fall out. When that has taken place, then put them into a fine sieve (the seeds are very small), and sift them carefully on to a sheet of white paper. If this harvest happens to be near winter, it is preferable to save the seeds till the spring; but if in the beginning of summer the seeds may be sown immediately. Prepare the pots for the seeds by filling them half full of broken pots, covering them with a thin layer of moss. Upon that place sifted heath-mould, mixed with one-half the bulk of silver sand; fill the pots up to the rim, and press the soil down rather firmly; make it very smooth with a round piece of wood; then sow the seeds, and cover them as lightly as possible (the thickness of a sixpence is almost too thick for such small seeds); then damp the soil with the finest syringe, letting it fall almost as gently as dew. Let the first watering settle, and then repeat it; it will gradually and gently sink into the earth without uncovering the seeds. The best position to place the seed-pots is on the greenhouse shelf close to the glass. There they must be watched almost hourly, and kept shaded from the sun. Whenever the surface appears dry the gentle dewing should be repeated. The seeds will come up in three weeks or a month. The plants may then have the morning and evening sun, which will, with plenty of air, prevent them damping off. As soon as they have made three or four leaves prepare a lot of pots exactly in the same way as for the seed-pots. Into these transplant the seedlings in rows pretty close together. In these pots they may remain till the spring following; then take them carefully up, and pot them into small pots, four in a pot, in which they may remain twelve months, when they may be potted off into small pots singly, and afterwards treated as plants from cuttings.

BY CUTTINGS.—To propagate Heaths by cuttings is

generally considered as the triumph of the propagator's art. The following materials are necessary:—Proper heath-mould, such as I described under the head Soil; a few rather wide and shallow pots, a quantity of pure silver sand, and a number of clean bell-glasses of different sizes; also prepare a quantity of broken pots in three sizes; see that all these are perfectly sweet and clean; have also a propagating-knife and scissors. Whilst all these are getting ready, choose a plant of each kind of Heath you intend to be increased; place them in a gentle heat, say 55°, to cause them to push forth young shoots. As soon as these shoots are an inch long they are fit to take off; then place a very small pot over the hole of the pot intended for the cuttings; fill round it with the largest crocks (broken pots); over these some of the middle size, and upon them at least an inch of the smallest; upon them place a thin layer of siftings, and then fill the pot within an inch of the top with fine, very sandy heath-mould, and the remaining inch with pure silver sand; then water it freely to settle the sand firmly, and moisten the under soil. It is then ready for the cuttings. Take them off with the scissors, and dress them with the knife, cutting off the leaves half the length of the cutting, close to, but not injuring, the bark. The cuttings need not be more than an inch long. Place them upon the sand as they are made, covering them with a bell-glass. When a sufficient number are made to fill one pot, plant them immediately with a small ivory, sharp stick; place them neatly in rows across rather thickly, but not so as to touch each other; let the leaves just stand clear out of the sand. A pot five inches across will hold about sixty cuttings. When the first pot is full give it a moderate watering, sufficient to cause the sand to fill up the holes made with the dibber or planting-stick. Let that pot remain without the glass just long enough for the leaves to dry. When all are filled, place them in a house where the heat is kept up to 55°. If the cutting-pots can be plunged in a gentle heat of tan or coal-ashes the pots will be kept moist, and the warmth will greatly assist the cuttings in forming roots. In this position they must be carefully attended, and securely shaded from the sun. To prevent them from damping off, the glasses should be wiped dry every morning. The cuttings will soon show symptoms of growth, and, as soon as roots are formed, remove the pots into a cooler house, shading them as usual from the sun. To prevent them from drawing up weakly give a little air by propping up the bell-glasses. Occasionally they will require water; but they should never be soaked or soddened. In about six weeks after removal into the cooler house they should be potted off. If left longer the roots are almost sure to perish in the barren sand. Treat them as described for the seedlings in the second stage, that is, pot them off four in a pot in three-inch pots; place them in a cold frame, shading closely from the sun. As fresh roots are made they will gradually acquire strength to bear more light and air. In this stage it will be desirable to nip off the tops, to cause the plants to become neat bushes. As soon as the plants will bear it, expose them to the full light. Should gentle showers fall they will greatly benefit the plants; but always shelter them whilst young from heavy rains. As the winter approaches remove them into the greenhouse, placing them on shelves close to the glass. In the spring, pot them off singly into the same-sized pots, and shade them for a time till new roots are formed. Afterwards treat them in the usual way for older plants. I have now, briefly as possible to be understood, given a full report of the points to be attended to in the management of this lovely tribe of plants.

My next communication will contain a list of select Heaths, arranged according to their season of blooming.

T. APPELEY.

ALGERIAN TOBACCO.

THE produce which promises to assume most importance, and over which the French Government can exercise most control, is that of tobacco. Algiers is at present the great tobacco province. Some is grown in Oran, and a few hectares in Constantine, but the bulk is brought to the great Government warehouse at Algiers. This is probably the largest building in Africa. It contains three-fifths of a mile of warehouses, and I passed a morning when at Algiers in going over it. Until quite recently the Government brought up the whole of the tobacco produced in the "colony," and if they had not, nobody else would. It was remarkably like hay, and they could only use it by mixing it in France with the produce of the plantations of Hungary and America. This the monopoly of the *régie* enabled them to do. By judicious prizes and classifications as to quality they have now, however, very much improved the quality of the produce, and, by liberality in price, they have rendered it a popular article of culture in the European garden patches. Now, however, the Government do not undertake to buy every leaf of tobacco grown in Africa. They are anxious to push it into general commerce, and some little finds its way at cheap rates into private hands. It is used to adulterate the American. At the *magazin* the Government bought during the last year 3,000,000 of kilos., at an average of 90f. the 100 kilos. Of this about one-third was produced by the natives, and the other two-thirds by the colonists. The tobacco is brought in in its rough state. The warehousemen take the bale to pieces, shake it, dry it, classify it according to its quality, and stack it. For the best the Government pays 140f. the 100 kilos.; for the worst, 20f. It is divided into four classes. The best tobacco produced by the Europeans comes from Boufarik, in the Metidja, and Birkadem, in the Sahel, near Algiers. At present the best is but very indifferent, and one of the penalties paid by the French for the conquest of Africa is being compelled to smoke rather worse cigars than they formerly had. This, however, is of no great consequence, for no Frenchman has the least idea of fragrance or flavour in tobacco. The *régie* has educated him to consider anything a good cigar, so that it will burn, and give forth a strong, rank smoke. The *indigènes* at present cultivate very little tobacco. The best is grown by the Chibili tribe. The culture will probably increase among the Arabs. In the towns the habit of smoking is already spreading, and even in the tents there are some who cannot resist the offer of a cigar. The strict Mussulman looks upon it, however, as a transgression only second to that of drinking wine or spirits, and some of the tribes have been forbidden by their marabouts to plant the heterodox weed. I had a long talk upon this subject with a Thaleb of the household of Si-Mokhtar. He was quite aware that the discovery of tobacco was posterior to the Koran, but the Prophet, he said, had forbidden intoxication under the name of wine, and his followers had no right to indulge in it under the name of tobacco. If this were a fundamental article of faith, the French would get little tobacco from the natives. The Berbers and the negroes, however, have no such scruples. Thus much for the tobacco culture.—(*Times*.)

LANTANA CROCEA SUPERBA CULTURE.

On the 27th of February last I received a healthy little plant from a respectable firm in Yorkshire, which was placed in the plant stove, and allowed to remain in the pot (a No. 60) until it had recovered from the effects of the carriage. On the 6th of March it was turned out of the pot, and placed in a No. 24 pot—a rather large shift this, but only what was deemed necessary after a careful examination of the roots, which were found to be perfectly healthy, and to have filled the original pot. The pot into which the plant was to be placed had been well drained with broken pots and a layer of rubbly turf, on the top of which was placed a little of the compost that had been prepared for the occasion, and which consisted of two parts turfy loam, two parts fibry peat, and one-third silver sand, well incorporated, but not sifted. The plant was then inserted in the centre of the pot, which was lightly filled with the compost, and struck smartly on

the potting-bench, to settle the compost equally round the roots of the plant, and to allow sufficient room between the soil and the top of the pot for the water required to feed the plant upon. The branches—four in number—were pinched back to within half an inch of the main stem. It was watered with water that had been heated to 80°, and the pot was then plunged into a dung hotbed that commanded a bottom-heat of 80°, and a top-heat of 60° by night, and from 70° to 75° by day. Here it remained for twenty-four days, during which time, and through the whole course of cultivation, it was watered with water that had had the chill removed from it. Air was freely given when the weather would admit. The shoots were regularly stopped as they elongated until the 19th of July, which kept the plant low and full of branches. On the 30th it was ascertained that the roots had reached the sides of the pot, and, to keep it growing, it was immediately removed into a No. 12 pot. To the above compost was added one part of two-year-old cowdung. Potting being completed, the pot was replunged into the hotbed for a few days, and then gradually raised in the bed, and finally removed into the plant stove, and placed on the surface of the pit. The thermometer in this house—a span-roof during this and the following month—was not allowed to fall below 60°, nor to rise above 75°. Here it received more air, and of a drier nature, than it had done while in the hotbed, and was occasionally watered with weak liquid-manure, that was made of bones dissolved in sulphuric acid, soot, lime, and rain water. In applying this care was exercised. It was not given for five or six days after potting, and then as already stated, but weaker, until the roots had reached the sides of the pot. Afterwards it was given stronger and more frequently than it was when it was first used; while the first bloom was allowed to expand, and then it was altogether discontinued, which was on the 7th of August.

This change soon caused the foliage to become better developed, and the shoots to be firmer and shorter jointed than they were in the frame. On the 20th of April the roots were observed protruding through the hole in the bottom of the pot, and forthwith it was shifted into a No. 8 pot, and placed on the front stage of the house, and as near the glass as it was practicable for it to stand. For this and its final potting, which was into a small No. 3 pot, that took place on the 22nd of June, the soil consisted of three parts turfy loam, one part fibry peat, two parts two-year-old cowdung, half-part silver sand, and quarter-part pounded charcoal. From the time it was removed into the stove to the time it commenced flowering it was syringed regularly every day with tepid water, except when the external air contained too much wet. It was also shaded, when in flower, during bright sun, and in the latter part of August it was placed in the greenhouse, where it has displayed its beauty, and is now going to rest, and will have to remain through the winter in a temperature of from 45° to 50°. It measured, when in perfection, nearly four feet high, and three feet nine inches across in the centre, and was one mass of bloom, the colour of which was a bright orange radiating from a yellow centre.—B. B., near Halifax.

AN IMPENETRABLE LIVE FENCE.

HAVING an old quickset fence that was quite naked at the bottom, through bad management in its infancy, and its being too old to sprout up if cut down, I tried the following plan to fill it up. In the autumn of 1852 I had it thoroughly cleaned of weeds, and the soil well loosened. I then procured some plants of the Dog Rose, cut the tops half off, and planted them among the quicks about two feet apart. In the following spring I applied a good dose of liquid-manure (diluted night-soil), and it is now one of the best fences in the parish, so close that a bird cannot fly through it.

The Dog Rose might be grown at a cheap rate from seeds, and transplanted. I think it would be a most useful plant to mix with quicks when new fences are formed, say planted two or three feet apart. It also bears cutting well, which is not the case with the common Sweet Brier, which is recommended by some for fencing. The pips also form a useful winter store for the feathered tribe.—G. T. F.

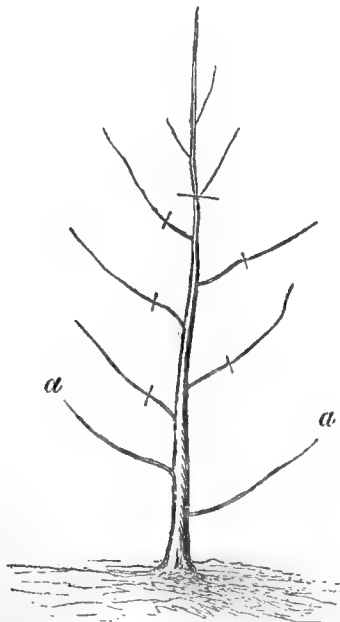
REARING THE PEACH AND NECTARINE.

If there is one point in the management of fruit-trees more than another on which the amateur requires information it is, perhaps, the mode of rearing young fruit-trees. Abundance of directions may be found in bygone periodicals for the training of trees which have attained maturity; but I am not aware that any advice worthy of notice exists as to the rearing of young stock. It is my purpose, therefore, to give a few hints on this subject.

The Peach and Nectarine are mostly budded on the Muscle stock, a kind of wild Plum. On the Continent, however, they are stated to use the Almond stock, or seedling Peaches raised from kernels of hardy kinds. These, in the main, have been considered too tender in the root for our climate, and, therefore, have nearly fallen into disuse. Muscle stocks, as well as most other stocks, are, or used to be, raised by a class of nurserymen termed "stock growers," who rear them by thousands for the trade in general, mostly, I believe, from layers or suckers. It is not worth the while, of course, of any amateur to rear them except as a hobby, for they may be purchased exceedingly cheap.

We will now suppose the case of a Muscle stock from the nursery planted in the garden of some amateur, and trace it upwards until it becomes a trained tree and beginning to bear. The young stock will probably be about a foot or more in height, with a stem as thick as the little finger. Some persons advise planting against the wall and budding it there, but I say, "No;" for I would rather recommend transplanting once or twice before final removal, in order to encourage fibrous roots; but it is requisite that the stock be planted in a soil which will encourage abundance of surface-roots. Such a soil is a compost consisting of chopped turfy loam and some half-decayed leaf-soil, and it may be liberally mixed with the ordinary garden-soil. The stock will require a little pruning, every shoot shortened to two or three eyes, and the leading shoot, if any, reduced in a similar way, for the stock must not be encouraged to become tall. A stem of eighteen inches after pruning will be sufficient; and, if any branches or spray exist low down the stem, they should be pruned closely, so that from six to eight inches of clean stem be left clear for the budder to operate on when the time arrives.

In order to give beginners a correct idea of the stock, I will give a rough sketch of its probable character at this period.

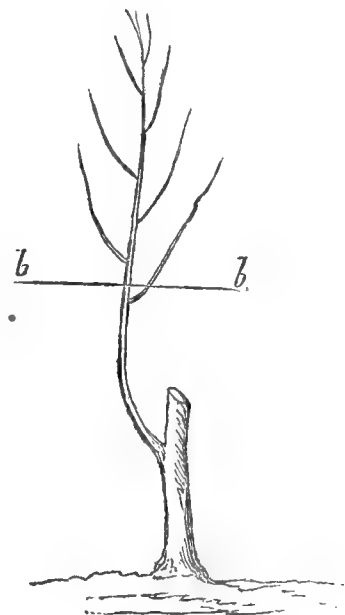


The cross marks indicate the points for the pruning-knife; the letters *a a*, shoots to be entirely removed.

We will now pass on to another stage, and I may observe that, if the stock is strong enough and time is precious, it may be budded the very summer succeeding its being planted. Whether any given stock is strong enough to bud is not a matter entirely dependent on age, but on the healthy condition of the stock, which should be at least half an inch in diameter. However, as stocks generally stand a second year before working, we will suppose a case of the kind. The second pruning season being come, the pruning must be repeated according to the maxims laid down for the first, taking care that, if any spray has been produced nearer than nine inches from the soil, it be all totally removed.

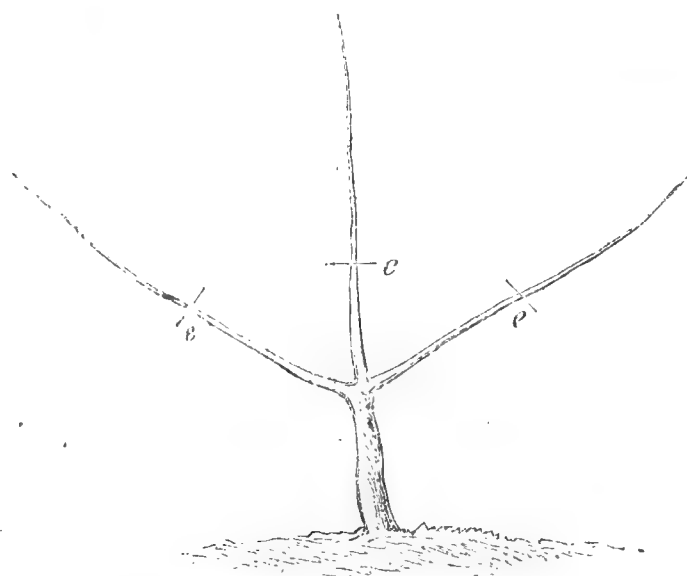
In the succeeding July the stock will be ready for budding; but, as such a proceeding is common to many of our fruits, and an illustrative sketch will be given, I pass on for the present. Let us now suppose it the end of July or beginning of August, and the stock budded; nothing remains but to see that the stock is watered, if necessary, in severe drought, and to loosen the bandage when the bud is safe. This will be the case by the middle of September, when the fate of the bud will be sealed. If the bandage be not loosened the stock by swelling is apt to become indented by pressure, and this is better avoided. There is no occasion, however, to remove the bandage; it may remain on awhile merely loosened.

Nothing more is requisite until the following February, when the stock is "headed back," as nurserymen term it; that is to say, the head is cut off almost close to the bud. This they do with a cut sloping away from the bud, the knife entering nearly opposite to the top of the shield of the bud, and slanting to an angle of about 45° . I, however, should think that it would be better to leave about four or five inches in length of the stock for one year. This would serve to tie the growing bud to. By the month of June the young shoot or bud will have advanced considerably, and care must be taken through the summer to fasten it, or it may be broken by the winds. At the conclusion of this season the bud should have grown nearly a yard in height, and the following figure will well represent its character:—

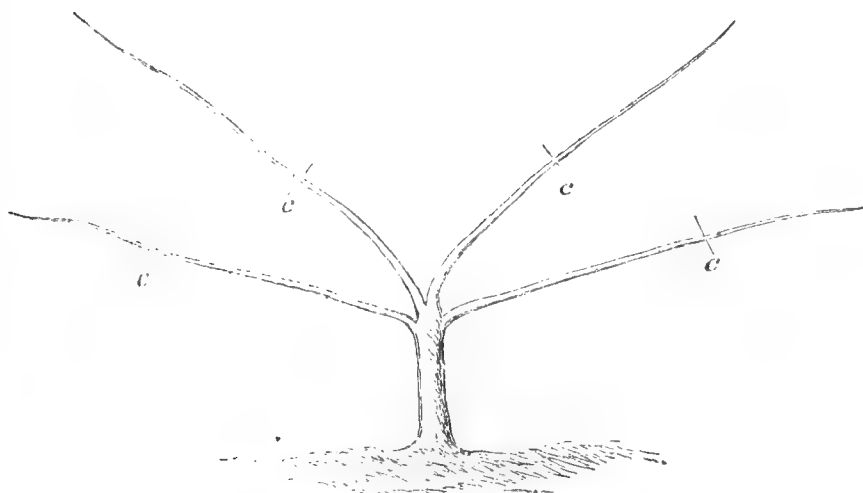


The young bud in rising generally produces side laterals for about two-thirds of its length; and the line *b b* signifies the point for the pruning-knife, which must be thus used during the rest season; and now I advise the amateur, for whom and small gardeners these re-

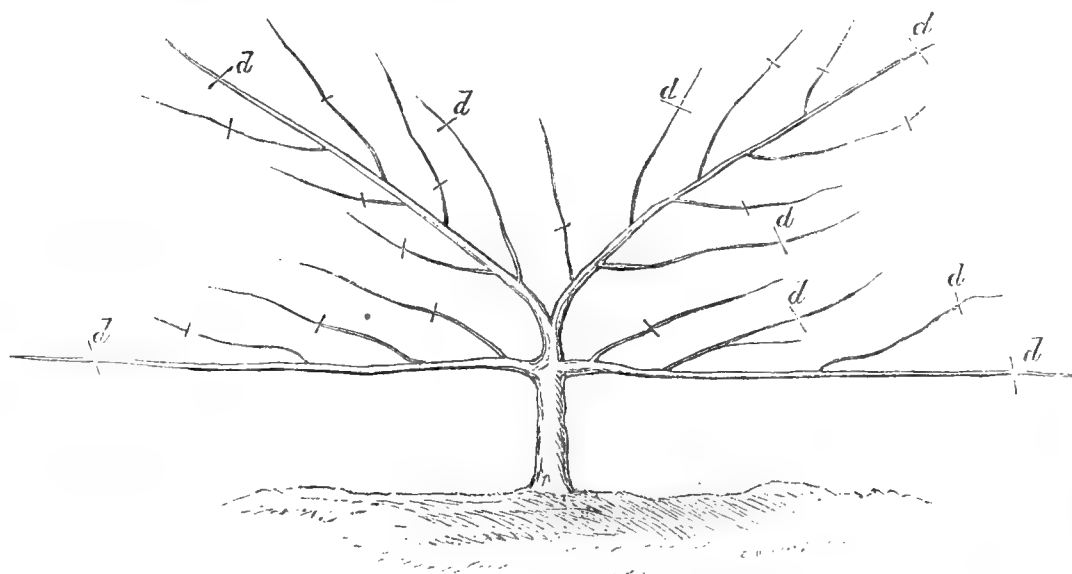
marks are intended, to remove the plant to its destination, taking great care to remove it with every possible fibre. | There are those who would advise its remaining until another year; but, however this may be with nurserymen and large gardeners, I consider that the amateur may fairly chalk out a course for himself. The young tree is now called a "maiden" by our nurserymen, a phrase used for a century or more to express an untrained plant. Below the branchy portion, or below *b b*, will generally exist about four or five buds or eyes, and these will become, under good management, as many shoots in the succeeding summer. Practical gardeners are generally satisfied with four shoots, two on each side; but if there be three it will suffice, only, in that case, I advise that there be encouraged a central one. At the end of this summer the young Peach or Nectarine will be like the annexed sketch.



One year's training, with three shoots.



One year's training, with four shoots.



The letters *d*, which might have been affixed to every part where the pruning point is indicated, show how the pruner may fairly apply his knife at the close of this year. To give further sketches is needless.

I may now conclude with a few general remarks, chiefly of a cautionary character, for, as a Jack Tar would say, there are breakers ahead. In the first place, through the various stages from the stock onwards,

keep down insects. Without this there can be no good Peach culture. In the second place, take care of the root; see that, whether as a stock or a Peach-tree, it is in good, sound soil, loamy in character if possible, containing less or more of "maiden soil." At every removal shorten every root, if it be only an inch or two, in order that fibres may be multiplied. Let everything like a "tap" or descending root be cut away or turned

completely horizontal. In all root pruning make a clean cut; and, if any portion of the root shows sucker-like excrescences, pare them away completely, or let that root undergo excision.

With regard to branch pruning it will be seen that certain shoots are marked to be pruned back very short. These are what I have ever called in these pages "nursery shoots;" and on a judicious adherence to this through the whole life of the Peach depends principally the symmetry of the tree, and a thorough clothing of the wall without naked portions, which at once spoil the appearance of an otherwise fine tree.

R. ERRINGTON.

CYPRIPEDIUM LOWEI.

LOW'S LADY'S SLIPPER.



THIS beautiful native of Borneo, and especially of the neighbourhood of Sarawak, was introduced in 1847. It has, when wild, from eight to ten flowers on one stem. It is especially distinguished by its two very long spatulate-shaped petals.

It is difficult to imagine anything more beautiful in its way than this *Bornean Lady's Slipper*. The lip is a purplish green, and smooth as if French-polished; the sepals are green, with a purple tinge near their base; the petals are quite three inches long, spreading and then curving gracefully inwards and upwards, narrow near the base, pale greenish yellow, blotched with deep brown, and rose-coloured at the ends, which are twice as broad as the other parts. It is said to be a plant of easy cultivation, and is a great acquisition.—(*Horticultural Society's Journal*.)

ROASTED GOURD-SEEDS.—It is only partially known that the roasted seeds of many of the Gourd tribe furnish an excellent addition and nice variety to the dessert, particularly those of the *Cucurbita pepo gigantea*, which produces seeds in abundance, possessing an agreeable nutty flavour.—AMICUS.

CONSTRUCTION, COST, AND MANAGEMENT OF A SMALL PIT FOR WINTERING PLANTS.

I SEND you these few hints, according to my promise in a late number of *THE COTTAGE GARDENER*, hoping they may prove of some service to those who, like myself, possess a small flower-garden, which they manage chiefly with their own hands; and especially I trust they will be acceptable to many of my clerical brethren.

When I commenced gardening I felt the want of some simple instruction of this kind. It was several years before I determined upon discarding the common garden-frame as a winter shelter for my bedding-plants (a make-shift which almost invariably ends in disappointment), and set up a pit with a flue. Had I known at how small a cost such a place can be constructed, how small is the necessary expenditure of fuel, and how easily and certainly the contents may be preserved during the worst seasons of damp and the severest frosts, I should decidedly have set up one at the outset.

To commence, then, with the cost of construction of a suitable pit. My own is 18 ft. 9 in. long, and 4 ft. 10 in. broad, inside measure. The brickwork is 4 in. thick; the height of the front is 2 ft. 2 in. of the back, 3 ft. 7 in. from the ground-level, exclusive of the framework at the top; chimney, 9 ft. At the back and sides are strengthening buttresses. The stoke-hole is at the back at one end; the top of the furnace 6 or 8 in. below the ground-level; and the flue, which runs round the front and each side, gradually rises till it enters the chimney. It will then be found that the surface of the coal-ashes for the plants to stand upon, being about 14 in. from the top of the brickwork in front, allows a sufficient depth over the hotter part of the flue near the furnace, and is shallower towards the cooler part nearer the chimney. The flue is detached 2 in. from the brickwork of the pit, and is constructed of brick on edge, and covered with large, heavy tiles (6d. a-piece), carefully cemented at the joints. The mason's bill for all this, inclusive of lime, sand, labour, grate, flue, chimney, &c., was £6 15s.

There are five lights, 5 ft. 4 in. long by 3 ft. 8 in. broad, substantially made of red pine, glazed with 16-oz. glass, and thrice painted. They cost me complete, carriage from Bristol included, under £1 a-piece. Fitting upon these lights are shutters for frosty weather. My own shutters are unnecessarily expensive, being tongued, and made to fit the lights accurately, lapping over each other, &c. They cost me (thrice painted) 6s. a-piece. Very excellent and more durable shutters, however, may be constructed of $\frac{3}{4}$ -deal boards, well fitted at the edges—not tongued—with a strong piece of board nailed across at top and bottom (of the upper side, when in position), one shutter for each light, and painted, at a cost of about 3s. each. They should be as heavy as is convenient to lift off and on—the heavier the better, as they keep the mats down closer to the glass. A strip, by the way, will be found necessary at the bottom of each shutter underneath, to meet the woodwork of the lower part of the light.

The account for such a pit as this will then stand as follows:—

	£	s.	d.
Mason's bill	6	15	0
Lights	5	0	0
Shutters.....	0	15	0
Framework on top of brickwork	1	10	0
	£14	0	0

This is a very liberal allowance, and I imagine would cover the cost of such a pit in any part of the country; and one with only four lights, but similar in other respects, may be built for £11 2s.

We now proceed to consider the plants to be placed in this pit when built. A four-light pit, 15 ft. by 4 ft. 10 in., will easily contain 144 seven-inch pots, capable of holding 10 or 12 cuttings each; i.e., 1440 cuttings at the least; but, allowing for a few old plants of Geraniums and plants single in a pot, there will still be ample room for 600 or 800 cuttings of Verbenas, Petunias, Heliotropes, Geraniums, &c., which, with Calceolarias (which may be wintered under hand-lights), will be quite sufficient to plant a garden such as I described lately. But in addition to the surface of the coal-ashes for

standing the pots on, a shelf may be easily arranged along the back of the pit, slung by three thicknesses of common copper bell-wire from screws in each rafter. My own shelf is of $\frac{3}{4}$ -elm, 12 in. wide, and hung so as to leave 18 in. below to the surface of the coal-ashes. This shelf will accommodate at least 200 more cuttings in small 48-pots. I prefer placing *Verbena* cuttings on this shelf.

Thus it is quite an easy matter to stow as many as 1600 cuttings in this four-light pit.

Now with regard to striking cuttings. It is hardly assuming too much to suppose that the possessor of a garden like this possesses, also, half-a-dozen hand-lights; if this is the case he has at once the means of raising all his bedding-plants in the best manner, without the aid of a hot-bed or any artificial heat whatever.

To begin with those first in order of time. All cuttings of *Geraniums* should be put in by the end of June, or even the middle of the month. They require no protection. Indeed, putting them under glass makes the striking of many kinds very precarious. I prefer striking the free-growing kinds several in one pot; but the old *Scarlet Variegated, Mangles', Flower of the Day, Mountain of Light, &c.*, do better struck singly in 48-sized pots; they are then not thrown back by repotting. A slight mixture of peat with the ordinary striking-soil will be found a great advantage for these difficult ones. These cuttings should be so placed that they may have shade for three hours or so in the middle of the day, but be exposed fully to the sun at other times, and care should be taken in keeping them quite moist.

The next succession of cuttings are those of *Verbenas, Heliotropes, Petunias, Lobelias, &c.* These must be finished off in time for the hand-lights to be used for the *Calceolarias* at the end of September. If a garden-frame is to be had they may all be struck in it at once, placed in a somewhat shady place, with a layer of coal-ashes for the pots to stand on, and put in in the middle or end of August; but, if the hand-lights are the only resource, we must commence proceedings quite in the beginning of that month, and then with a little care a great number of cuttings may be struck, and able to bear the air by the end of September. In striking cuttings without heat an eye must be kept to the slugs and worms, which are great pests. A decoction of the green husks of walnuts (which may be preserved from year to year) will bring every worm out of the ground wherever it reaches, and a liberal sprinkling of lime will go a good way towards freeing one of slugs. These cuttings must be stopped back to the second joint, and kept stopped as long as they continue to grow. They will then winter well without potting off, will form nice bushy plants in the spring, may be potted off in April, and will start immediately they are turned into the beds in May.

The wintering of *Calceolarias* under hand-lights has been alluded to frequently of late in *THE COTTAGE GARDENER*, so I need say no more about these cuttings than that a good heap of loose litter over the light is ample protection. Old plants of *Calceolarias*, if taken up sufficiently early and carefully potted, are easily wintered in a shady, but dry corner, by raising a bank all round of turf, or boards and mould, two or three hurdles placed at the top, some old mats on them, and, in severe weather, plenty of loose litter over all. These old plants always "come in useful," as the saying is, and are quite worth the little trouble necessary to save them.

Having now done with striking our cuttings, let us return to the pit. I prefer getting everything safe into the pit by the middle of October. The *Geraniums* inhabit the cooler end—*Heliotropes, Petunias, Lobelias, &c.*, taking up the rest, with all the *Verbenas* for which room cannot be found on the shelf. I should have stated before that the interior of the pit, quite from the foundation, must be filled with coal-ashes, pretty coarse and rough, finishing off at the top with a two or three-inch layer of finely sifted, for the greater convenience of standing the pots upright. Water may be given overhead with a rose till the middle of October, but not after, all through the winter. After that time water with a tin can with a long spout, such as engineers use for oiling machinery: it does not disturb the mould, and pours the water where you want it, without spilling any. A careful eye should be given to the pots all through the winter, that they may not get too dry, which they are very apt to do; but,

if firing has been sparingly used, very little watering will be required.

I will now conclude with a few simple hints as to the winter management of the pit.

Fresh air is the very best preservative of plants. The difficulty is to know how to get enough of this in very damp and in frosty weather. No one can pretend to give rules to suit every case; common sense and a little experience are what the amateur chiefly wants. The more air and light the plants have had in fine weather, the less they will suffer when it is very damp. In very muggy, wet weather, if you are afraid of a superabundance of moisture among the plants, tilt all the lights as usual, and keep a brisk fire burning for about three hours in the middle of the day; but beware of indulging in a frequent use of the fire-place. With regard to frost, every gardener ought to have a Six's upright thermometer, which registers the extremes of heat and cold, placed against a north wall, and should keep a written account of the extremes each day. He will then be able to form a pretty correct judgment as to the amount of frost that may be expected any night, and the following facts will be all he wants as a guide. The pit is safe against a sudden frost coming after mild weather, with shutters and mats over the glass, even if the glass fall to 10° or 12° of frost, without any fire. In long-continued frost, with shutters and mats as before, and the fire lighted at two o'clock and kept in till seven, the pit is safe with the thermometer outside down at 5° during the night. In a long frost bear in mind this circumstance—that coal-ashes imbibe and retain a considerable amount of heat, so that if there was a brisk fire yesterday (the brickwork at the side of the furnace feeling warm to the hand), a less fire to-day will be sufficient. When the fire is low and intended to be let out, close the top of the chimney with a bundle of mat, or old cloth of any kind, so as completely to stop the draught, and place the cover over the stoke-hole at the same time; the flue will then retain its heat for hours longer than it would otherwise. Of course it is a very good plan to keep a second register thermometer constantly in the pit. At all events I should advise a beginner to commence with doing so.

I find that I have omitted to state that the furnace should be 11 in. wide and 10 in. high to the top of the arching; the stoke-hole is 3 ft. 6 in. square, and should have a stout boarded cover of inch-and-a-half deal.

This pit is suitable for growing both *Melons* and *Cucumbers* by taking out the coal-ashes and filling their place with dung, and, of course, putting up a wooden partition to keep the two kinds of plants separate.

I hope that Mr. Beaton will be kind enough to supply any omissions I may have made in these elementary remarks for beginners. I am but little removed from that condition myself, and speak from only a few years' experience. I am sorry he should think I "hit him hard" in the matter of the *Diadematum regium*, especially as he has treated me so handsomely. I am perfectly willing to allow that scientific people do use the Latin language on a different system from that in use at the Universities, and I will not again disturb them in their right.—H. C. K., — *Rectory, near Hereford.*

GRAPES FOR THE MILLION.

(Continued from page 149.)

WHAT I advised the two previous autumns relative to the disposal of the lateral spray, and pruning back to well-ripened wood, need not be repeated; but I will add a few remarks as regards the chief operator—sunshine. It will probably be found necessary to deprive the Vines, at this and future seasons, of about one-fourth of their leaves during the first fortnight in October, singling out those which underlay, or are less mature than the others; for the foliage which is at this period of most importance is that which has arrived at substance and maturity. The shoots which fruited this season cut entirely away in November; and the secondaries, which are to produce the fruiting shoots for the ensuing year, should be pruned to meet, or nearly so, at their points; and then with a sharp knife slice off every bud they have formed on their upper surface, as they, for the climax I am about to arrive at next year, would be found detrimental if they remained, in con-

sequence of their proneness to grow first and fast where they would not be wanted to appear at all, and so prove robbers to their compeers below. Shorten the revellers on each main stem, and let them remain till spring; for sometimes the old wood of the Vines will not form a bud exactly where one is wanted, and these shoots are to be left as providers for those contingencies.

The breaking of the buds on the secondary branches is the first thing to be considered at the outset of the fourth year; and as the last bud near the junction with the main stems generally forms a weakly shoot, the second or third buds even are those I prefer to depend upon for fruit; and the moment they are of sufficient length, secure the young succulents with zinc wire, to go in an horizontal direction just beneath, and attached to their parent branches, though at first they require most careful handling, for in this their "tender nonage" they are easily disunited and broken. Two of these fruiting shoots may be allowed to each secondary branch till it is perceived, when the Grapes are set after the blossoming, whether the one nearest the stem intends to produce two good bunches of fruit; if so, that will be sufficient; and, to prevent branch crowding, the other shoot may be done away with, otherwise retain both shoots, and let them bear one bunch of grapes each. Stop them at three leaves beyond their nearest fruiting joints. It is also necessary, as early as possible, to begin tracing the secondaries for the fifth year; and, for reasons which I will explain presently, they also must be led to grow horizontally from the main stems, at a measurement of about nine inches *above* the secondaries produced last year; but, should there not be a bud to break at that particular distance on both stems, opposites can be got from the shoots spoken of as providers for contingencies of this sort. At any rate, shoots may be led either up or down (up is best) the stems to the spots required, for there is no plant more accommodating than the Vine in allowing its shoots to grow and become bended into almost any position at the will of the operator; but, if buds are not required to break from these providers, cut them clean away, and allow more to grow in their stead; and should the Vines bleed at those places they were cut from, apply a piece of heated iron to the surface of the incisions. The general routine management goes on customarily as regards laterals, and stopping them.

In the year before last I was agreeably surprised to behold my *Sweet Water* Grapes ripening, though the wasps and flies devoured them as fast as they became so. Last year the *Sweet Waters* ripened with nearly the same result, and the *Esperiones* also ripened nearly. I disposed of 150 bunches of the latter to a confectioner of this town, who made some gallons of wine from them, which, if allowed time, would become excellent tipple. I have had this year 150 bunches of the finest Grapes I ever saw in England in the open air, and they have attained to a larger size and ripeness than previously, and the Vines would have borne double that number of bunches had I allowed them to do so. Early last spring, as I "sat a-thinking," it occurred to me that, as my black Grapes became so nearly matured the year before, surely I might conjure up some contrivance, combined with my system of training, which would lend its aid, and induce them to become quite ripe. Garden frame-lights, and all that sort of thing, I acknowledged; but I preferred no covering over my pet foliage whatever. It was only for the speciality of the fruit I wished for some transparent inclosure; and if the wish would but become father to the construction, and it succeeded, I could cast it on the waters of life, and stake its title to benefit many cottage gardeners and other people possessing small greenhouses, who, in these days of flower-gardening, might wish to devote them entirely to Flora; yet, themselves being lovers of Grapes, and in lieu of some other plan or place to grow them, cannot find heart to do away with the Vines from the rafters, albeit, perhaps, owing to sudden heat, sudden cold, neglect of air-giving, or too much air-giving; foliage blotched, scorched, dead; mildew, blight, thrips, red spider; thirstings, rustings, shrivelling, shanking, wholesale thinnings and no thinnings, pruning, and not knowing how to prune, crustaceous, old, obstinate, jobbing, blue aprons, or from some ill or other, their proprietors seldom get a bunch of Grapes fit to eat or to be seen.

Therefore, under these considerations, I did, and cer-

tainly do think it an object gained if I can assist to point out how they may procure for themselves good, well-ripened Grapes to a certainty, and at not one quarter the difficulty, anxiety, or expense in the open air; so I will now hasten to unfold a result, the achievement of the wish. As it will already have been seen, the secondaries of my Vines for each succeeding year are trained nine inches *above* their namesakes of the present, which gives an unobstructed longitudinal space, fifteen inches broad, to the bunches of fruit as they hang upon the wall; and here is an invention to cover over the fruit, which, although the idea is not new to these pages, I believe the particular construction to be so. It gives me great pleasure in its working, and anybody who likes may give it "a name." It is made by procuring one-inch-broad strips of lead or zinc to form a flat, triangular basework, measuring thirteen inches between each extreme angle. A casement lead frame, made one foot wide at top, to slope contractingly outwards six inches to four inches for a front, when the whole is brought to a point downwards, and soldered on to the basework. The casement lead is then glazed with glass chosen free from blisters; for they would concentrate the rays of the sun, and act as a burning lens upon the fruit. The lid is also formed of glass set in casement lead, having a notch cut in the centre of its upper edge to admit the fruit-stalk. It is moveable at pleasure, and made fast in its position by pieces of zinc wire passed through eyelet holes of copper wire, correspondingly soldered to it, and the base, and the framework. The construction is secured flat against the wall by simply driving a nail near a fruit-stalk; pass the upper end of the base between the fruit and the wall to hang upon it, and then drive a couple more nails with a slope to press against the lead or zinc on each side, fasten on the lid without damaging the skin of the fruit-stalk, and should any hole or inequality be found in the wall sufficiently large to admit either wasp, spider, or fly beneath the basement, let the orifice be closed with a piece of cotton wadding, as, also, the hole admitting the fruit-stalk. Allow the leaves above to hang over for shade, and the thing is complete in less time than I take to write it; proof against all insect depredators, and the Grapes remain to the last increasing in blooming beauty,

"Unhurt by southern show'rs and northern hail."

In the spring suspend the contrivances, temporarily reversed to a nail, over each of those bunches which offer to become the best when they are about to blossom, and it will protect them from the frosts. Place the inventions over the Grapes for good the first dry day after the Grapes have been thinned on the bunches, and they will require no further interference whatever till the fruit becomes ripe and ready to cut, when the lid is removed, and the fruit easily relieved from the inclosure without the slightest injury to the bloom on its surface; and this is a great desideratum, for the finest Grapes in the world become lowered in esteem when they appear in polite society disfigured in their bloom.

When the Grapes have attained the size of Marrowfat Peas, and when they are arrived at their last swelling process, convey to them the whole quantity of soap-suds made on the washing days at those periods, and give the roots of the Vines a thorough soaking with it. And here I will mention a circumstance to be guarded against by those who have Vines, and should be induced, from what I have written, to try some of the covers without adopting my system of training. I wished to prove what effect bending a branch into any desired position, at the time of placing the constructions, would have upon the fruit; and the result of thus suddenly checking the flow of the sap is, that the Grapes are very diminutive in consequence, proving it cannot be done with impunity. Therefore let me advise a horizontal arrangement of branches this winter, allowing space beneath them to admit the covers without obstruction, which covers, having zinc *basements*, my friend Mr. Morris, glazier, Woodstock, Oxon, offers to manufacture at one shilling each if they are ordered by the dozen, and I suppose they might last twelve years at least with common care.

Lastly, it is necessary for me to recommend, at the general leaf-thinning early in October, to bear back and retain with zinc wire to the branches all those which hang over and shade the frames; for the Grapes are benefited after that time by allowing the sun to shine unobstructedly

upon them; and, at the general pruning in November, let the secondaries, with those branches which bore the fruit attached to them, be cut entirely away; and those others trained nine inches above them during the summer, and now to be called the secondaries, must be borne down carefully into their places. Cut all the branches quite away to the main stems that spread above the height of twelve feet on the wall, and so on year after year.

I have lately expelled an Apricot-tree, which leaves me room for another Vine, and I intend to procure the *Muscat St. Laurent* Grape, spoken of at page 287 of this volume; and the four Grapes for successional fruiting I would recommend for out door culture are, the *Muscat St. Laurent*, the *White Sweet Water*, the *White Muscadine*, and the *Black Esperione*.

Such, Mr. Editor, is the six years' practical history and features of my Vines—the evidence of things seen—facts, small and unimportant though they may appear, yet daily before me as examples of profit and of pleasure.—UPWARDS AND ONWARDS.

[We can testify that the Grapes were exceedingly well-ripened, and in good condition for table as late as the middle of November.—ED. C. G.]

SCILLA SIBIRICA AS A SPRING FLOWER.

BEING a reader of your valuable journal, and seeing spring flowers inquired about, I beg to recommend to the notice of your readers the *Scilla Sibirica*, which, for planting in masses, or mixing with the Snowdrop, Crocus, Denscanis, &c., is one of the most valuable of spring flowers I possess. It is perfectly hardy and easy of culture, requiring no more care than other hardy bulbs. I have a bed containing about a thousand bulbs of it, and from the middle of March to the middle of May it is a complete mass of most beautiful blue, contrasting well with its surrounding companions and the pure snow-flakes, which often form its bed in the early spring. How seldom do we see this beautiful harbinger of spring cultivated!—G. T. F.

QUERIES AND ANSWERS.

PROPAGATING TEA-SCENTED ROSES.—DARK POMPONES.

"Will you oblige me with the best time and method for striking Tea-scented Roses? I have two frames, one with bottom-heat in the spring for Cucumbers, and one for flowers without heat.

I also wish to know which you consider the most showy half-dozen dark Pomponé Chrysanthemums for pot-culture.—THOS. BROWN."

[Tea-scented Roses strike most readily in a warm bed. They would do very well with ten degrees less heat than Cucumbers; but Cucumber-heat is not too much for them.

The best dark-coloured Pomponé is either *Bob* or *Requiqui*; the third best is *Brilliant*; the fourth best is *Daphne*; but for the fifth and sixth best there are many to compete. *Lais* and *Atropos* are as good as any, though not our choice; but, if you must have six really dark ones, we know not how you can pass them. Watch what Mr. Beaton will have to say about them shortly. We expected to have heard from him on the subject this week.]

TO CORRESPONDENTS.

PLANTS FOR A GOLD FISH GLOBE (*A. S. C.*).—The plants which we have found to succeed best in a globe with Gold Fish are *Hydrochuris morsus ranæ*, *Ranunculus aquatilis*, *Myriophyllum spicatum*, and *Anacharis ulsinastrum*. You may also introduce a small quantity of freshwater *Conferveæ*. All of these you can get in the ponds and ditches of this country.

TEN-WEEK STOCKS (*A Subscriber, Cheshire*).—If there were any stamens left in your double flowers, they might fertilise the single ones in their neighbourhood. It is a matter of accident, and no one can raise double flowers from seed with unfailing success.

NAME OF FEEN (*S. Appleby*).—We believe your specimen is a variety of *Lustræa dilatata*, and considered by some botanists a species, to which they have given the name of *L. collina*.

CAMPANULA PYRAMIDALIS (*A Country Amateur*).—Mr. Fish detailed its culture not long since. Your smaller leaf is from *Campanula fragilis*, and the larger, we think, is from *C. Garganica*; but it is unwise to send a single leaf. It only increases our trouble. A sprig should be sent, and a flower.

VARIOUS (*J. S. L.*).—We cannot explain why Wasps, but not Bees, prefer the blossoms of *Cuphea platycentra* to the fruit of Peaches. The *Cuphea* flowers, we suppose, must secrete something peculiarly agreeable to the waspish palate. The garden infested with slugs must be damper or worse cultivated than the neighbouring garden not so infested. We fear you cannot grow Vines in your conservatory borders as bushes without much root-pruning, and great trouble in other ways. Why not grow them in pots? We know of no synonyme for the *Bess Pool Apple*; for *Bess Pool* is only a corruption. Your plant, we think, is a *Teucrium*; but we cannot be certain without seeing a sprig of it bearing blossoms.

HEATING A WINDOW GREENHOUSE (*S. H. S.*).—Employ a small ornamental gas-stove, with tube to carry off the fumes. You can command any heat you like according to the size of the burners. We cannot tell anything about the cost. Ask any gas-fitter.

DISEASED RABBITS (*Y. X.*).—We could not give any information without seeing them.

NAMES OF PLANTS (*Generally Useful*).—*Lobelia splendens*. (*T. H. M.*)—We must see a specimen in bloom before we can tell its name. Your *Lotus Jacobæus* damps off because you do not give it a freely-circulating air. (*V. P. T.*)—Your evergreen Honeysuckle is *Caprifolium hirsutum*.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

CREWE. January 29th and 30th, 1857. Secs. S. Sheppard and D. Margelts, Esqs. Entries close January 15th.

CRYSTAL PALACE. January 10th, 12th, 13th, and 14th. Grand Exhibition of Poultry, Pigeons, and Rabbits. Secretary to the Poultry Exhibition, William Houghton, Esq., Crystal Palace. Entries close December 13th.

ESSEX. At Colchester, December 31st, 1856, and 1st, 2nd, and 3rd of January, 1857. Secs., G. E. Attwood and W. A. Warwick. Entries close December 17th.

NOTTINGHAMSHIRE. At Southwell, December 17th and 18th, 1856. Sec., Richard Hawksley, jun. Entries close November 19th.

NOTTINGHAM CENTRAL POULTRY ASSOCIATION. January 13, 14, and 15. Hon. Sec. Frank Bottom. Secretary to the Canary Department, Jno. Hetherington, jun., Sneinton.

PRESTON AND NORTH LANCASHIRE. January 21st and 22nd, 1857. Sec., Ralph Leigh, Esq., 125, Church Street, Preston. Entries close December 13th.

N.B.—Secretaries will oblige us by sending early copies of their lists.

WATTLED PIGEONS.

CLASS No. 1, VARIETY 5.—THE MAHOMET.

THE breed of Pigeons formerly known as Mahomets seems now to be lost in this country. The writer of the excellent "Treatise on Pigeons," published by C. Barry, 1765, describes it as "nearly of a cream colour, with bars across the wings as black as ebony, the feathers very particular, being of two colours: the upper part or surface of them appearing of a cream, and underneath a kind of sooty colour, nearly approaching to black, as are, likewise, the flue feathers, and even the skin, which I never observed in any other Pigeons but these; its size much like that of a Turbit, with a fine gullet, and in lieu of a frill the feathers appear like a seam; the head is short, and inclined to be thick, hath an orange eye, and a small, naked circle of black flesh round the same, and a beak something resembling a bull-finch's, with a small black wattle on it."

Such a Pigeon, with black skin, cere, and wattle, I do not remember ever having seen. Mr. Moore, 1735, calls a white Barb the Mahomet, and accounts for its being so named, because he thinks it was the variety trained by Mahomet to peck in his ear, by which he induced his followers to believe the Holy Ghost was whispering to him.

The Germans breed a variety between the Turkish and Scandaroon, and Dr. Bechstein says, "When it is of a particular black mottled it is called a Mahomet Pigeon, and is highly esteemed."

In France, too, I have seen a variety, evidently a cross between the Scandaroon and Barb, of a dun colour, and there called a Mahomet. Pigeons are held sacred by the Mahometans, because a Pigeon or Dove once saved the Prophet when pursued, by remaining on her nest, where he was concealed. The Russians, too, according to J. G. Kohl, consider it a sacrilege to harm the bird in whose form the Holy Ghost was made manifest.—B. P. BRENT.

PRESERVING EGGS.

I SHOULD be glad to have your valuable advice respecting some eggs which I have tried to preserve for winter consumption. During the autumn I laid up forty dozen in a strong solution of lime and water, with salt; on trying them lately, I find that, although quite fresh, the yolks are hard, and contracted in size. Can you tell me the reason of this, or how to remedy it? Can it be the salt, as I have heard that eggs kept in layers of dry salt become hard? Will you also have the kindness to say if sea sand and gravel are good for poultry, or the contrary?—E. F. B.

[The failure must be in the salt. We have preserved eggs for years in lime, and, although we will not say they are equal to newly-laid ones, yet we have seen them eaten with relish when put on the breakfast-table in January.

The method we adopt is as follows:—A vessel, say a bread-pan, is half filled with lime, which is then mixed with water till it makes what we used to call "a pudding" when we were children, and could enjoy a quiet half-hour in the dirt. In this the eggs are put, and used as required. We have known them kept in salt only, and are informed this system left nothing to desire, but we have not tried it.

The method was to put at the bottom of a barrel a layer of salt; in this the eggs were put, SMALL END DOWNWARDS, then another layer of salt, then eggs, and so on till the barrel was full. Sea sand and gravel will not injure poultry.]

THE BIRMINGHAM POULTRY EXHIBITION.

It is now proved, beyond the possibility of doubt, that the Exhibition of the present year has very far exceeded any of its predecessors as to the purity of breeding of the fowls competing; and, although we ourselves fully anticipated such a result, we confess we were ill-prepared for the universal excellence that presented itself throughout all classes.

The astonishment of visitors was particularly excited by the entire absence of specimens of indifferent quality; and the causes that led to so pleasing a result consisted evidently in the working out of the new arrangement, by which competitors were compelled to pay, as entrance-money for their respective pens of poultry, one-half more than on any previous occasion.

The necessity of some such drawback to the introduction of excessive numbers of pens became annually more and more obvious to the Council. The increase of competition has, year by year, multiplied to so serious an amount, that it was apparent to the managers of this colossal Exhibition, unless the most effective and stringent rules were applied to the division allotted to the poultry compartments, the exclusion of all other varieties of stock would be the inevitable and consequent result; and that, instead of fat stock forming one of the most prominent features at Bingley Hall, the lowing of kine, the bleating of sheep, or the stentoric breathings of overplethoric pigs, would certainly be entirely superseded by the shrill crowings of chanticleer alone. This was not desirable on many accounts, and, therefore, it was found necessary to enforce the increased amount of subscription; or, at the present hour, *the fact is indisputable*, extensive as Bingley Hall really is (and undoubtedly the very head of its class for such purposes throughout the United Kingdom), it would not by any means, under the original regulations, have nearly found accommodation simply for the poultry alone. The absolutely compulsory effort to abridge numbers, however, we are most happy to state, has not in the slightest degree tended to the depreciation of the value of the poultry exhibited, and its consequent interest, but simply excluded masses of pens of birds that evidently were sent to the Birmingham Show, in previous years, entirely in the hope of effecting sales, without even the vestige of an expectation of securing any of the premiums the Society offered for the most excellent ones.

The tediousness to visitors of wandering along avenues of poultry of second-rate quality is thus entirely expunged, and the present Birmingham Poultry Exhibition stands singly and alone in point of the universal excellence of the stock, the Judges themselves frankly admitting it was quite "a relief" for them to meet with a pen approaching an

indifferent character during the faithful fulfilment of the doubly onerous duties that necessarily devolved upon them. But the knowledge possessed by these gentlemen of the general traits of character in the different classes was not the only requisite indispensable on this occasion; their pedestrian powers were taxed in exact proportions, and their untiring perseverance to finally arrive at correct decisions was the theme of general conversation among the few individuals who were privileged to watch their progress from a distance. Their task was necessarily a most unprecedentedly toilsome one, and we ourselves never witnessed gentlemen so thankfully embracing the benefits of a "sit-down" as all five of them were at the conclusion of their duties. It is but common justice to these indispensable officials to state, that their decisions were the most generally satisfactory of any that we have in remembrance as to the Birmingham meetings of prior years.

To describe any of the many and unequalled advantages of Bingley Hall for the purposes of a Poultry Exhibition would be quite superfluous; we intend, therefore, simply to confine ourselves to a few general remarks on the birds and classes exhibited. In *Hamburgs* the competition ran strongly, more particularly in the Golden-pencilled and Golden-spangled classes. That indispensable characteristic to success, "white ear-lobes," was nearly universal throughout all these classes; but we must not permit this opportunity to pass by without strongly enforcing on exhibitors the equally vital necessity of paying the strictest possible attention to the unsullied purity of the ground-colour of their aspirants to distinction, many otherwise extremely excellent pens losing all chances of pre-eminence from this single failing. Stained, or, as it is technically termed, "mossy," under-ground colour will ever prove a fatal objection. The *Cochin* fowls showed that neither time, trouble, nor expense had been spared in their production. These classes are now fast regaining much of their lost popularity, and we admit our satisfaction that it is so; for, *when really well bred*, they do most undoubtedly stand quite alone as winter layers. The general contour of these birds has much improved during the last two years; and that the prevalent excitement to procure specimens of this very *useful* variety, a few years back, led to the production of gaunt, large specimens of fowls, rejoicing alone in the "name," without any of the peculiarities of the breed, in honest fact, like the renowned razors of the well-known pedlar, "made to sell," is patent to almost every amateur. It was the ridiculous prices of that day that thronged any inferior large bird upon the market as "a *Cochin*." Not so now; the matter is well understood; careful and well-advised breeding is again restoring to us the beautiful specimens of former days. In all the *Cochin* classes this year the improvement is equally obvious, even on slight inspection. The *Spanish* were never equalled; we will add, most emphatically, that, whether as chickens or adults, such fowls, and in such truly *overwhelming numbers*, never competed. Really first-class fowls were compelled to pass as "highly commended" only; and, at length, the Judges found even this distinction, so truly invidious, that they appended, as a "last resource," the extraordinary and unprecedented announcement which stands at the close of each of these classes. In *Dorkings* their perplexities were scarcely less urgent. "Troubles on troubles multiplied" was here the order of the day, and we may safely say that, in numerous instances "condition" *exclusively* carried the final awards. We have so repeatedly alluded to its vital importance, that we will not recapitulate, but simply direct the attention of owners to the absurd impolicy of sending fowls from Exhibition to Exhibition, without any intervening time for the needful recovery from close confinement. They must eventually fail *in toto*, however excellent they may have been at the commencement of their career. The *Malay* classes were quite the best filled we ever saw, and, what is most unusual, *numerously* also. The *Polish* were equally unexceptionable; but close, compact topknots seem scarcely as well attended to as we could desire. Size only in the crests, combined with irregularity, are certain to produce the loss of premiums. We were glad to see the really "Spangled *Polands*" regaining their position over the recently-introduced "laced" rivals. Our highest possible praise is the just due of all the *Game* classes. Comments would be useless; all were surpassingly excellent; but we

cannot omit one brief reproof to parties who could send fowls actually bleeding from "dubbing" within a few days of their incarceration. The folly and cruelty of such a practice are equally obvious to all. *Bantams* numbered strongly. Our chief attention was directed to the beautiful *Game birds* that stood prominently forward in unexampled perfection; they would be a pride to any Exhibition. At no previous meeting of this Society have *Turkeys*, *Geese*, and *Ducks* stood out with equal claims as table-birds to public favour. The weights, in all instances, very far exceeded those of former years, and it certainly begins at length to appear truly problematical when the progressive movement will reach its climax. *Pigeons* generally were very superior.

Notorious as Birmingham has always been for the careful attention paid to the birds during their incarceration, for which the thanks of all competitors are richly due to Mr. Edward Hewitt, of that town, the present Exhibition shows even increased solicitude rather than otherwise. Never before, most certainly, have we witnessed the cleanliness and regularity that met our eyes on all sides; whilst, undoubtedly, not a few of the birds found their present position far different from what generally attends them when "on travel." Quietness and peace prevailed everywhere.

In conclusion, most heartily do we hope this meeting will realise the fondest and essentially necessary expectations of its projectors as to pecuniary returns, as the continuance of these highly instructive and popular *réunions*, it must be admitted, will stand materially affected by the result in this instance, and the discomfiture of the parent Society would undoubtedly exercise a fatal influence on all others wherever located.

We shall give further comments and particulars next week from another excellent authority. At present we must proceed to the lengthy Prize List.

GOLDEN-PENCILLED HAMBURGH.—First, Mrs. William C. Worrall, Rice House, Knotty Ash, Liverpool. Second, Mr. John Worsey, Lower Clopton, Stratford-upon-Avon. Third, Mr. James Dixon, North Park, Horton, Bradford, Yorkshire. *Chickens of 1856.*—First, **SILVER CUP**, Mr. John Lowe, Whitmore House, Birmingham. Second, Mr. Richard Hawksley, jun., Southwell, Nottinghamshire. Third, Mr. Richard Alkin, Hartshill, Atherstone. Highly Commended.—Mr. John Lowe, Whitmore House, Birmingham. Mr. Frederick Welstead, The Cottage, Stonely, Kimbolton. Commended.—Mrs. William C. Worrall, Rice House, Knotty Ash, Liverpool. Mrs. John Worsey, Lower Clopton, Stratford-upon-Avon. Miss Elizabeth Whittington, Preston Hill, Henley-in-Arden. (A very good class.)

GOLDEN-SPANGLED HAMBURGH.—First, Mr. William C. Worrall, Rice House, Knotty Ash, Liverpool. Second, Mr. James Dixon, North Park, Horton, Bradford, Yorkshire. Third, Mr. George Fell, Warrington. *Chickens of 1856.*—First, **SILVER CUP**, Mr. William Kershaw, Heywood, near Manchester. Second, The Right Honourable Lord Berwick, Cronkhill, Shrewsbury. Third, Mr. William Henry Swann, Farnsfield, Southwell, Nottinghamshire. Highly Commended.—Mr. William C. Worrall, Rice House, Knotty Ash, Liverpool. Mr. Thos. Battye, Brownhill Upper Mill, Holmbridge, Huddersfield. Commended.—Mr. Caleb Stansfield Dixon, North Park, Horton, Bradford, Yorkshire. Mr. Joseph Bamforth, Holmfirth, Huddersfield. Mr. William Sanday, Holme Pierrepont, Nottingham.

SILVER-PENCILLED HAMBURGH.—First, Mrs. Thomas Lyon Fellowes, Beighton Rectory, Norfolk. Second, Mr. James Dixon, North Park, Horton, Bradford, Yorkshire. Third, Mr. William Henry Denison, Hardwicke Cottage, Woburn, Bedfordshire. Commended.—The Hon. William Warren Vernon, Wolsley Hall, Rugeley. *Chickens of 1856.*—First, Mr. Edward Archer, Malvern, Worcestershire. Second, Mrs. H. Sharp, 47, Mill Lane, Bradford, Yorkshire. Third, Mr. William Maude, Victoria Place, Bingley, Yorkshire. Highly Commended.—Mrs. William C. Worrall, Rice House, Knotty Ash, Liverpool. William Cox, Esq., Brailsford Hall, Derby. Commended.—Mr. Gilbert Greenall, jun., Grappenhall, Warrington.

SILVER-SPANGLED HAMBURGH.—First, Mr. William Ludlam, North Holme Street, Bradford, Yorkshire. Second, Mrs. H. Sharp, 47, Mill Lane, Bradford, Yorkshire. Third, Mr. C. Stansfield Dixon, North Park, Horton, Bradford, Yorkshire. *Chickens of 1856.*—First, Mr. Richard Teebay, Fulwood, near Preston, Lancashire. Second, The Rev. Thomas Lyon Fellowes, Beighton Rectory, Norfolk. Third, Mrs. E. A. Botham, Wexham Court, Slough. Highly Commended.—Miss Mary Anne Tuley, Keighley, Yorkshire. Messrs. Bird and Beldon, Prospect Place, Eccleshill Moor, near Bradford, Yorkshire. Mr. Josiah B. Chune, Green Bank, Coalbrookdale. Commended.—Arthur George Brooke, Esq., Cumberland Street, Woodbridge. Mr. George Fell, Warrington.

POLISH FOWL (Black, with White Crests).—First, Mr. Thomas Battye, Brownhill Upper Mill, Holmbridge, Huddersfield. Second, Mr. Thomas Pantton Edwards, Lyndhurst, Hampshire. Third, James F. Greenall, Esq., Grappenhall Hall, Warrington. *Chickens of 1856.*—First, Mr. Thomas Pantton Edwards, Lyndhurst, Hampshire. Second, James F. Greenall, Esq., Grappenhall Hall, Warrington. Third, Mr. George Ray, Ivy Cottage, Minstead, Lyndhurst, Hampshire. Highly Commended.—Mr. Thomas Battye, Brownhill Upper Mill, Holmbridge, Huddersfield. Commended.—Mr. George Smith Fox, The Court, Welington, Somersetshire. (A most excellent class.)

POLISH FOWL (Golden).—First, Miss Sarah Dixon, North Park, Horton, Bradford, Yorkshire. Second, Master Godfrey John Horner, Charlotte Street, Hull. Third, Mr. Joseph Conyers, jun., 42, Boar Lane, Leeds. *Chickens of 1856.*—First, Mr. Joseph Conyers, jun., 42, Boar Lane, Leeds. Second, Miss Sarah Dixon, North Park, Horton, Bradford, Yorkshire. Third, Mr. Gilbert Greenall, jun., Grappenhall, Warrington.

POLISH FOWL (Silver).—First, **SILVER CUP**, Mrs. Adkins, Edgbaston, Birmingham. Second, Mr. James Brown, Turner's Lane, Eton, Windsor. Third, Mr. Parkins Jones, High Street, Fulham, Middlesex. Highly Commended.—Miss Sarah Dixon, North Park, Horton, Bradford, Yorkshire. James F. Greenall, Esq., Grappenhall Hall, Warrington. Commended.—Mr. Henry Adkins, Edgbaston, Birmingham. (An unusually good class.) *Chickens of 1856.*—First, Mr. John Brundrit, Runcorn, Cheshire. Second, Mr. James Brown, Turner's Lane, Eton, Windsor. Third, Mr. Parkins Jones, High Street, Fulham, Middlesex. Highly Commended.—Miss Elizabeth Whittington, Preston Hill, Henley-in-Arden. Mr. Gilbert Greenall, jun., Grappenhall, Warrington. Mr. Thomas Pantton Edwards, Lyndhurst, Hampshire. Commended.—Miss Sarah Dixon, North Park, Horton, Bradford, Yorkshire. (One of the best classes ever seen.)

POLISH FOWL (of any other variety).—First, Mr. William Holder, Turner's Lane, Eton, Windsor. (White.) Second, W. Graham Vivian, Esq., Singleton, Glamorganshire. (Yellow.) *Chickens of 1856.*—First, Thomas Dutton, Esq., Streatham Common, Surrey. (White.) Second, The Right Honourable the Countess de Flahault, Tulhalla Castle, Perthshire. (Buff.)

SPANISH.—First, **SILVER CUP**, Master H. Campbell Davies, Spring Grove, Hounslow. Second, Henry Daniel Davies, Esq., Spring Grove, Hounslow. Third, Captain Windham Hornby, R.N., Knowsley Cottage, Prescott. Fourth, Mr. Joseph Whittington, Wootton Wawen, near Henley-in-Arden. Highly Commended.—Master Arthur Daniel Davies, Spring Grove, Hounslow. John S. Henry, Esq., Woodlands, Crumpsall, Manchester. Mr. E. Page, Hawthorn Villa, Smethwick, near Birmingham. Mr. Benjamin Newham, 9, Court, Newtown Row, Birmingham. Mr. William Dawson, Selly Oak, Birmingham. Mr. Potter, Prestwich, near Manchester. Commended.—Mr. James Marriott, Floore, Weedon. (The Judges have been sparing of commendations, because they feel it their duty to declare that this class surpasses anything they ever saw.) *Chickens of 1856.*—First, Master McGregor Rake, Brandon Hill, Bristol. Second, Mr. George Fell, Warrington. Third, Master Arthur Daniel Davies, Spring Grove, Hounslow. Fourth, Mr. Michael Potter, Prestwich, Manchester. Highly Commended.—Mrs. Windham Hornby, Knowsley Cottage, Prescott. Miss Rosa Jane Davies, Spring Grove, Hounslow. Mrs. John Dain, Lee Brook, Wednesbury. Mr. William Gray, Turner's Lane, Eton, Windsor. Mr. E. Page, Hawthorn Villa, Smethwick, near Birmingham. Charles Edwards, Esq., Brockley Court, Bristol. Mr. David Smith Moore, Teddesley House, Walsall. Mr. G. A. Gelderd, Aikrigg End, Kendal. Commended.—Joseph Kilvert Bartrum, Esq., Richmond Hill, Bath. (If possible, this class surpasses the preceding one.)

DORKING (Coloured).—First, Mr. William Wright, West Bank Widnes, Warrington. Second, Mrs. Donne, Oswestry. Third, Mr. John Robinson, Vale House, Garstang. Fourth, The Honourable Mrs. William Warren Vernon, Wolsley Hall, Rugeley, Staffordshire. Highly Commended.—Mr. William Wright, West Bank, Widnes, Warrington. The Rev. Stephen Donne, Oswestry. The Rev. J. L. Popham, Chilton Rectory, Hungerford, Berkshire. Commended.—Mrs. Hanbury, Thorn Bank, Leamington. Miss Hannah Whittington, Preston Hill, Henley-in-Arden. Captain Windham Hornby, R.N., Knowsley Cottage, Prescott. The Rev. John Hill, The Citadel, Hawkstone, Shrewsbury. Edward Gwynne, Esq., Wem, Shropshire. Mr. Wm. Henry Denison, Hardwicke Cottage, Woburn, Bedfordshire. (A good class.) *Chickens of 1856.*—First, **SILVER CUP**, Mrs. Donne, Oswestry. Second, Mr. Henry Donne, Oswestry. Third, Mrs. Windham Hornby, Knowsley Cottage, Prescott. Fourth, Mr. G. A. Gelderd, Aikrigg End, Kendal. Highly Commended.—The Right Honourable the Countess of Chesterfield, Bretby Hall, Burton-upon-Trent. The Right Honourable Viscount Hill, Hawkstone, Shropshire. Mrs. Henry Fookes, Whitechurch, Blandford, Dorsetshire. Mr. William Wright, West Bank, Widnes, near Warrington. Captain Windham Hornby, R.N., Knowsley Cottage, Prescott. Mr. James Drewry, Newton Mount, Burton-upon-Trent. Master William Hurst Wright, West Bank, Widnes, near Warrington. Edward Lister, Esq., Cassia Lodge, near Northwich, Cheshire. Mr. Edward Archer, Malvern. Arthur H. Thursby, Esq., Wormleighton, Southam. Commended.—The Right Honourable Lord Robert Grosvenor, M.P., Moor Park, Rickmansworth, Hertfordshire. Mrs. Donne, Oswestry. Miss Mary Jackson, Vale House, near Garstang. Dr. John Dale Hewson, Coton Hill, Staffordshire. Edward Lister, Esq., Cassia Lodge, near Northwich, Cheshire. Mr. William Bownass, The Royal Hotel, Bowness, Windermere. Mr. John Robinson, Vale House, near Garstang. (The Judges cannot speak too highly of this class.)

DORKING (White).—First, Miss Mary Jackson, Vale House, Garstang, Lancashire. Second, Mrs. Ann Farmer, Whately Hall, Tamworth. Highly Commended.—Mr. Joseph Clift, Dorking. *Chickens of 1856.*—First, Mr. John Robinson, Vale House, Garstang, Lancashire. Second, Mr. William Symonds, jun., Milbourne St. Andrew, Blandford, Dorsetshire. Commended.—The Right Honourable the Countess of Dartmouth, Patshull, Altrington. Mrs. Mills, Bisterne, Ringwood, Hampshire. (A good class.)

COCHIN-CHINA (Cinnamon and Buff).—First, **SILVER CUP**, Mr. Charles Punchard, Blunt's Hall, Haverhill, Suffolk. Second, Mr. Henry Tomlinson, 10, Balsall Heath Road, Birmingham. Third, Mr. Thomas Stretch, Marsh Lane, Bootle, Liverpool. Commended.—Mr. G. A. Gelderd, Aikrigg End, Kendal. *Chickens of 1856.*—First, The Rev. George Gilbert, Claxton, Norwich. Second, Mr. Howard James, Walsall. Third, The Rev. George Gilbert, Claxton, Norwich. Highly Commended.—Miss Annie Fookes, Whitechurch, Blandford, Dorsetshire. Mr. Thomas Hanley Barker, Hovingham, Yorkshire. Commended.—Mr. Charles Punchard, Blunt's Hall, Haverhill, Suffolk. Mr.

George C. Peters, Moseley, Birmingham. Mr. Thomas Stretch, Marsh Lane, Bootle, Liverpool.

COCHIN-CHINA (Brown and Partridge-feathered).—First, **SILVER CUP**, Mr. Thomas Bridges, Bridge Cottage, Croydon, Surrey. Second, Mr. George C. Adkins, West House, Edgbaston, Birmingham. Third, Mr. William Wanklyn, jun., Green Bank, Bury, Lancashire. *Chickens of 1856*.—First, **SILVER CUP**, Mrs. Hodson, North Petherton, Bridgewater, Somersetshire. Second, Mrs. Edmund Herbert, Powick, Worcestershire. Third, The Rev. Grenville F. Hodson, North Petherton, Bridgewater, Somersetshire. Highly Commended.—Mr. John Bell, Thirsk, Yorkshire. Commended.—Master Joseph Henry Cattell, Wake Green, Moseley, Birmingham. (A capital class.)

COCHIN-CHINA (White).—First, Mr. Robert Chase, Moseley Road, Birmingham. Second, Mrs. Fowler, Prebendal Farm, Aylesbury. *Chickens of 1856*.—First and Second, Mr. Robert Chase, Moseley Road, Birmingham.

COCHIN-CHINA (Black).—First, Mr. William Wanklyn, jun., Green Bank, Bury, Lancashire. (The Second Prize withheld.) *Chickens of 1856*.—First, Mr. W. B. Mapplebeck, 6, Bull Ring, Birmingham. Second, Mr. William Wanklyn, jun., Green Bank, Bury, Lancashire.

BRAMA POOTRA FOWLS.—First, Mrs. E. A. Botham, Wexham Court, Slough. (The Second Prize withheld.) *Chickens of 1856*.—First, Mrs. E. A. Botham, Wexham Court, Slough. Second, Mr. J. F. Chater, Haverhill, Suffolk. Highly Commended.—The Rev. Frederick Thursby, Abington Rectory, Northampton.

GAME FOWL (White and Piles).—First, Mr. Richard Dummeller, Shackerstone Field, Atherstone. Second, Mrs. Windham Hornby, Knowsley Cottage, Prescott. Third, Mr. James Thomas Wilson, Redditch. Commended.—Miss Collis, Edgbaston, Birmingham. Mr. John Mallabey Baker, Dordon Hall, Atherstone. Mr. Richard Dummeller, Shackerstone Field, Atherstone. *Chickens of 1856*.—First, Mr. Thomas Battye, Brownhill Upper Mill, Holmbridge, Huddersfield. Second, Mr. Richard Dummeller, Shackerstone Field, Atherstone. Third, Mr. John Mallabey Baker, Dordon Hall, Atherstone. Highly Commended.—Mr. Edward Harris Strange, Ampthill, Bedfordshire. Mr. Henry Snow, 56, High Street, Birmingham. Mr. David Joseph Arnold, Tamworth.

GAME FOWL (Black-breasted and other Reds).—First, **SILVER CUP**, Mr. Edward Lowe, Cumberford Mills, Tamworth. Second, Mr. Richard Woods, Osberton, Worksop, Nottinghamshire. Third, Mr. William Dawson, Selly Oak, Birmingham. Highly Commended.—Mr. Michael Potter, Prestwich, Manchester. Captain Windham Hornby, R.N., Knowsley Cottage, Prescott. Mr. John Bacon, Withybrook, Coventry. Mr. William Holt, King's Norton, Birmingham. Mr. John Stubbs, Weston Hall, Stafford. Edward H. France, Esq., Ham Hill, Worcester. Messrs. Siddons and Sons, Aston Road, Birmingham. Commended.—Mr. Edward Glover, Olton Green, Solihull. Mr. Nathan N. Dyer, Bredon, Tewkesbury. Mr. R. S. Arnold, Coombe Fields, Coventry. *Chickens of 1856*.—First, William Cox, Esq., Brailsford Hall, near Derby. Second, Mr. W. T. Cox, Spondon Hall, near Derby. Third, Mr. William Henry Swann, Farnsfield, Southwell, Nottinghamshire. Highly Commended.—Mrs. Titterton, Headley Heath, King's Norton, near Birmingham. Mr. John Yardley, Cumberford Hall, near Tamworth. William Cox, Esq., Brailsford Hall, near Derby. Mr. John Bacon, Withybrook, near Coventry. Commended.—Mr. James Hand, Amington Old Hall, near Tamworth. Mr. Henry Sewell, Upton-upon-Severn. Mr. John Mallabey Baker, Dordon Hall, near Atherstone. Mr. John Bacon, Withybrook, near Coventry. Mr. Richard Woods, Osberton, near Worksop, Nottinghamshire.

GAME FOWL (Blacks and Brassy-winged, except Greys).—First, Mr. T. T. Burman, Lynn, Walsall. Second, Mr. W. J. Bentley, Wellington, Shropshire. Third, Messrs. Field and Ballard, Bragg's Farm, Hockley Heath, near Birmingham. Highly Commended.—Mr. Nathan N. Dyer, Bredon, Tewkesbury. *Chickens of 1856*.—First, Mr. William Ludlam, North Holme Street, Bradford, Yorkshire. Second and Third, Mr. W. J. Bentley, Wellington, Shropshire. Highly Commended.—Mr. Abraham Hopkins, New House, Yardley, Worcestershire. Mr. William Dester, Seckington, Tamworth. Commended.—Messrs. Field and Ballard, Bragg's Farm, Hockley Heath, near Birmingham.

GAME FOWL (Duckwings and other Greys and Blues).—First, Mr. Edward Farmer, Green Hill, Derby. Second, Mr. Henry Sheild, Preston, Rutlandshire. Third, Mr. William Ludlam, North Holme Street, Bradford, Yorkshire. Highly Commended.—J. P. Brindley, Esq., Union Hall, Kinver, near Stourbridge. Mr. William Holt, King's Norton, near Birmingham. Mr. James Thomas Wilson, Redditch. John Rodbard Rodbard, Esq., Aldwick Court, Langford, near Bristol. Mr. Thos. William Jones, Portland Cottage, Wellington, Shropshire. Commended.—Messrs. Bullock and Rapson, Leamington. *Chickens of 1856*.—First and Second, John Wright, Esq., Hulland Hall, Ashbourne. Third, Mr. Edward Lowe, Cumberford Mills, Tamworth. Highly Commended.—John Rodbard Rodbard, Esq., Aldwick Court, Langford, near Bristol. Mr. Theed William Pearse, Bromham Road, Bedford.

MALAY.—First, Mr. James Leighton, 183, High Street, Cheltenham. Second, Mr. William Manfield, jun., Dorchester. Highly Commended.—Thomas Harvey Dutton Bayly, Esq., Ickwell House, near Biggleswade, Bedfordshire. *Chickens of 1856*.—First, Mr. William Manfield, jun., Dorchester. Second, Mr. Charles Ballance, 5, Mount Terrace, Taunton.

ANY OTHER DISTINCT BREED.—First, Thomas Harvey Dutton Bayly, Esq., Ickwell House, near Biggleswade, Bedfordshire. (Black Hamburgh.) Second, Mr. William Dawson, Hopton Mirfield, Yorkshire. (Sultans.) Third, Mr. Thomas Taylor, Burleigh Villa, near Wellington, Shropshire. (Emu, or Silky Negroes.) Highly Commended.—Sir Robert Throckmorton, Bart., Buckland, Berkshire. (Sicilian.)

BANTAMS (Gold-laced).—First, **SILVER CUP**, The Honourable Miss Russell, Kirkby Hall, Hinckley, Leicestershire. Second, The Rev. George Cruwys, Cruwys Morchard Court, Tiverton, Devonshire. Highly Commended.—Mr. Thomas Parker Mew, West Cowes, Isle of Wight. Mr.

Matthew Leno, jun., Harpenden, Hertfordshire. The Rev. John Hill, The Citadel, Hawkstone, Shrewsbury. Mr. Harry Wildman, 101, High Street, Birmingham. (An excellent class.)

BANTAMS (Silver-laced).—First, Mr. Matthew Leno, jun., Harpenden, Hertfordshire. Second, Mr. Thomas Heath, Wolsley Hall, Rugeley. Highly Commended.—Mr. Harry Wildman, 101, High Street, Birmingham.

BANTAMS (White).—First, Mr. William Elkington, Lichfield. Second, Mr. Thomas Parker Mew, West Cowes, Isle of Wight. Highly Commended.—The Rev. Grenville F. Hodson, North Petherton, Bridgewater, Somersetshire. Joseph Kilvert Bartrum, Esq., Richmond Hill, Bath. Mr. J. R. Harris, Paradise Street, Birmingham.

BANTAMS (Black).—First, Mr. Richard Hawksley, jun., Southwell, Nottinghamshire. Second, Mrs. Hodson, North Petherton, Bridgewater, Somersetshire. Highly Commended.—The Right Honourable Lord Berwick, Cronkhill, Shrewsbury. Mr. Joseph John Horton, 233, Bradford Street, Birmingham. Mr. Thomas Parker Mew, West Cowes, Isle of Wight. Commended.—Mr. W. Henry Holmes, Bridgewater, Somersetshire. Mr. Matthew Ridgway, Dewsbury. (An excellent class.)

BANTAMS (any other variety).—First, **SILVER CUP**, Mr. W. S. Forrest, Greenhithe, Kent. (Black-breasted Red.) Second, Miss E. M. Sturge, Edgbaston, Birmingham. (Muffed White.) Highly Commended.—Mr. W. S. Forrest, Greenhithe, Kent. (Duckwing Game.) Commended.—Miss Mary Ann Steele Perkins, Sutton Colefield. (Red-breasted Game.) Mr. Edward Stansfield, Dewsbury. (Black-breasted Red Game.)

GESE (White).—First, Mr. William Manfield, jun., Dorchester. (Yorkshire.) Second, Rev. T. O'Grady, Hognaston, Ashbourne. (Improved Com. English.) Third, The Lady Evelyn Stanhope, Bretby Hall, Burton-upon-Trent. Highly Commended.—Mrs. Warburton, Kill, Naas, Ireland. (White Embden.) Commended.—Miss Baker, Dordon Hall, Atherstone. (White Lower Furness.) Mr. William Winterton, Wolvey Villa, Nuneaton. (English.) Mr. Thomas Panton Edwards, Lyndhurst, Hampshire.

GESE (Grey and Mottled).—First, Francis Edwards, Esq., Bulstrode Park, Buckinghamshire. (Mottled.) Second, H. D. Davies, Esq., Spring Grove, Hounslow, Middlesex. (Toulouse.) Third, Mr. John K. Fowler, Prebendal Farm, Aylesbury. (Toulouse.) Highly Commended.—Mr. William Kershaw, Heywood, near Manchester. (Toulouse.) Commended.—B. Heywood Brooksbank, Esq., Tickhill, Rotherham. (Common.) Mr. William Hall, Ashton, near Leominster. (Grey or Mottled English.)

DUCKS (White Aylesbury).—First, Mr. John Weston, Aylesbury. Second, Master Arthur Daniel Davies, Spring Grove, Hounslow. Third, Mr. John K. Fowler, Prebendal Farm, Aylesbury. Highly Commended.—Mrs. Fowler, Prebendal Farm, Aylesbury. Miss Annie Fookes, Whitechurch, Blandford, Dorsetshire. Mr. John Weston, Aylesbury.

DUCKS (Rouen).—First, Mr. R. E. Ashton, The Oaklands, Bury, Lancashire. Second, Mr. W. G. K. Breavington, Vicarage Farm, Hounslow. Third, Mr. Theed Wm. Pearse, Bromham Road, Bedford. Highly Commended.—The Right Honourable Lord Berwick, Cronkhill, Shrewsbury. Mr. John Weston, Aylesbury, Buckinghamshire. B. Heywood Brooksbank, Esq., Tickhill, Rotherham. Commended.—Miss Annie Fookes, Whitechurch, Blandford, Dorsetshire. Daniel Harrison, Esq., Singleton Park, Kendal. Mr. R. E. Ashton, The Oaklands, Bury, Lancashire. (A beautiful class.)

DUCKS (any other variety).—First, Mrs. Tennant, Needwood House, Burton-upon-Trent. (Labrador, or Buenos Ayres.) Second, Edward H. France, Esq., Ham Hill, near Worcester. (White Call.) Third, Edward H. France, Esq., Ham Hill, near Worcester. (Brown Call.) Highly Commended.—Charles Edwards, Esq., Brockley Court, near Bristol. (Buenos Ayres.) Francis Edwards, Esq., Bulstrode Park, Buckinghamshire. (Wild.) Commended.—Mrs. Fowler, Prebendal Farm, Aylesbury. (White Polish.) Miss Fanny Clifton, Whittington Cottage, Worcester. (Buenos Ayres.) Miss Mary Anne Steele Perkins, Sutton Colefield. (East Indian, or Labrador.) Charles Edwards, Esq., Brockley Court, near Bristol. (Wild.)

TURKEYS.—First, Miss Fairlie, Chevely Park, Newmarket. (Cambridgeshire.) Second, Rev. H. Owen, Heveningham, near Yoxford, Suffolk. (Wild American.) Third, Miss F. Rodbard, Aldwick Court, Langford, Bristol. (Cambridgeshire.) Commended.—Mr. Thomas Williams, Reading, Berkshire. (English.) *Birds hatched in 1856*.—First and Third, Miss Fairlie, Chevely Park, Newmarket. (Cambridgeshire.) Second, The Right Hon. Viscount Hill, Hawkstone, Shropshire. (American.) Highly Commended.—Miss Annie Fookes, Whitechurch, Dorsetshire. (Cambridgeshire.) C. R. Colville, Esq., M.P. Lullington, Burton-on-Trent. (Bronze.) The Rev. T. Lyon Fellowes, Beighton, Norfolk. (Cambridgeshire.)

CLASSES FOR SINGLE COCKS.

DORKING.—First, The Honourable and Reverend Thomas Henry Noel Hill, Berrington, Shrewsbury. Second and Third, Master William Hurst Wright, West Bank, Widnes, Warrington. Highly Commended.—The Rev. John Hill, The Citadel, Hawkstone, Shrewsbury. Thomas Ullock, Esq., Quarry Howe, Windermere. (Grey.) Mr. Edmund Herbert, Powick, Worcestershire. The Rev. John Farmer Newton, Kirby-in-Cleveland, Yorkshire. (Coloured.) Master William Hurst Wright, West Bank, Widnes, Warrington. (Grey.) Commended.—Mrs. Townshend, Rolleston, Burton-upon-Trent. Mr. Joseph Wood, Droitwich, Worcestershire. (A very excellent class.)

SPANISH.—First, Master McGregor Rake, Brandon Hill, Bristol. Second, John Rodbard Rodbard, Esq., Aldwick Court, Langford, Bristol. Third, Master Arthur Daniel Davies, Spring Grove, Hounslow. Commended.—Mrs. Townshend, Rolleston, Burton-upon-Trent. Miss Fanny Rodbard, Aldwick Court, Langford, Bristol. Master McGregor Rake, Brandon Hill, Bristol.

COCHIN-CHINA.—First, Miss Robinson, Mansfield Woodhouse, Nottinghamshire. (Buff.) Second, Mr. Thomas Bridges, Bridge Cottage,

Croydon, Surrey. Highly Commended.—Master Edmund Chalmer Stretch, Marsh Lane, Bootle, near Liverpool.

BRAHMA POOTRA.—First, Mr. Richard Teebay, Fulwood, Preston, Lancashire. Second, Miss Emily Breavington, Bath Road, Hounslow, Middlesex. Commended.—Mr. Christopher Dain, Southampton.

PENCILLED HAMBURGH.—First, Mr. William Bankes, Weston House, Runcorn, Cheshire. Second, Daniel Harrison, Esq., Singleton Park, Kendal. Commended.—Mr. William Bankes, Weston House, Runcorn, Cheshire. The Rev. T. G. M. Luckock, Upper Berwick House, Shrewsbury. Mr. Frederick Armstrong, Hawnes West End, Bedfordshire.

SPANGLED HAMBURGH.—First, Mrs. G. C. Adkins, Edgbaston, Birmingham. Second, Mr. Thomas Barber Wright, The Quarry House, Great Barr, Staffordshire.

GAME.—First, Mr. Richard Swift, Southwell, Nottinghamshire. Second, Mr. Edward Nichols, Hamley House, Rugeley. Third, Mr. John Yardley, Cumberford Hall, near Tamworth. Highly Commended.—Miss Baker, Dordon Hall, Atherstone. Master George Baker, Dordon Hall, Atherstone. Mr. R. S. Arnold, Coombe Fields, near Coventry. Mr. George Smith, 53, Aston Street, Gosta Green, Birmingham. Mr. William Mansfield Bill, Hoyer's Heath, King's Norton. Commended.—William Yate Hunt, Esq., Clarendon Square, Leamington.

POLISH.—First, Mr. John Brundrit, South Bank, Runcorn, Cheshire. Second, Mrs. G. C. Adkins, West House, Edgbaston, Birmingham. Commended.—Miss Emily Breavington, Bath Road, Hounslow. Mr. George Ray, Ivy Cottage, Minestead, Lyndhurst, Hampshire.

PIGEONS.

SILVER CUP.—Almonds, Carriers, Pouters.—Mrs. E. A. Lingard, Snow Hill, Birmingham. Very Highly Commended.—Miss Clara Adkins, West House, Edgbaston, Birmingham. (Almond Tumblers and Carriers.) Commended.—Mr. Jones Percivall, 13, Queen's Row, Walworth, Surrey. (Pouters.)

SILVER CUP.—Fantails, Nuns, Beards, Jacobins, Trumpeters.—Mr. Frank Bottom, Sherwood Hill, Nottinghamshire.

CARRIERS.—First and Second, Messrs. W. Siddons and Sons, Aston Road, Birmingham. Highly Commended.—Mr. John Simkins, Parliament Street, Nottingham. (A good class.)

ALMOND TUMBLERS.—First, Henry Sandys Salisbury, Esq., The Lawn, Kempsey, Worcestershire. Second, Mr. Edward R. Maddeford, Staines, Middlesex.

BALDS.—First, Mrs. Lingard, Snow Hill, Birmingham. Second, Mr. John W. Edge, Aston New Town, Birmingham. Commended.—Mrs. Lingard, Snow Hill, Birmingham. Mr. Jones Percivall, 13, Queen's Row, Walworth, Surrey. Mr. George Edge, Aston New Town, Birmingham.

BEARDS.—First, Mr. James Smith, 9, Sale Street, Paddington, London. Second, Mr. George Edge, Aston New Town, Birmingham. Commended.—The Honourable Rowland C. Hill, Hawkstone, Shropshire.

MOTTLED TUMBLERS.—First, Mr. Jones Percivall, 13, Queen's Row, Walworth, Surrey. Second, Mr. John Percivall, Clint Villa, Harbourne, Birmingham.

OWLS.—First, Mr. Harrison Weir, Lyndhurst Road, Peckham, London. Second, Mr. Arthur P. Pressdee, Belgrave Street, Balsall Heath, Birmingham. Commended.—The Honourable Rowland C. Hill, Hawkstone, Shropshire. Mr. Isaac Reeves, Over End, West Bromwich. Mr. Edward Langley Corker, 11, Queen Street, Cheapside, London. (A good class.)

NUNS.—First, Mr. Arthur P. Pressdee, Belgrave Street, Balsall Heath, Birmingham. Second, Mr. Thomas Henry Adkins, West House, Edgbaston, Birmingham. Commended.—Mr. John W. Edge, Aston New Town, Birmingham. Disqualified for trimming.—Mr. W. H. Holmes, Bridgewater, Somersetshire.

TURBITS.—First, Mr. Edward R. Maddeford, Staines, Middlesex. Second, Mr. Harrison Weir, Lyndhurst Road, Peckham, London. Commended.—Master J. E. Mapplebeck, Highfield, Moseley Road, Birmingham.

ARCHANGELS.—First, Mr. Charles Richard Titterton, Snow Hill, Birmingham. Second, Mr. Thomas Henry Adkins, West House, Edgbaston, Birmingham.

JACOBINS.—First, Miss Julia Milward, Newton St. Loe, near Bath. Second, Mr. Harrison Weir, Lyndhurst Road, Peckham, London.

FANTAILS.—First, Mr. Harrison Weir, Lyndhurst Road, Peckham, London. Second, Mr. George Ure, Rosebank, Dundee. Commended.—Mr. John W. Edge, Aston New Town, Birmingham.

TRUMPETERS.—First, Mr. W. H. Holmes, Bridgewater, Somersetshire. Second, Master John Edwards Mapplebeck, Highfield, Moseley Road, Birmingham. Commended.—Mr. Francis Adkins, Edgbaston, near Birmingham.

POUTERS OR CROPPERS.—First, Mrs. Edward A. Lingard, Snow Hill, Birmingham. Second, Mr. Henry Child, jun., Sherbourne Road, Birmingham. Commended.—Mr. Thomas Bridges, Bridge Cottage, Croydon, Surrey.

BARBES.—First, Mr. Thomas Henry Adkins, West House, Edgbaston, Birmingham. Second, Mr. Edward R. Maddeford, Staines, Middlesex. Highly Commended.—Miss Caroline Titterton, Headley Heath, King's Norton. Mr. Edward Langley Corker, 11, Queen Street, Cheapside, London.

RUNTS.—First, Mrs. Edward A. Lingard, Snow Hill, Birmingham. Second, Mr. Thomas Henry Adkins, West House, Edgbaston, Birmingham.

DRAGONS.—First and Second, Mr. Edward Snow, jun., 56, High Street, Birmingham.

ANY OTHER NEW OR DISTINCT VARIETY.—First, Mr. Edward R. Maddeford, Staines, Middlesex. (German Letz.) Second, Miss Elizabeth L. Lavender, Biddenham, near Bedford. (Frillback.) Commended.—Miss Elizabeth L. Lavender, Biddenham, near Bedford. (Hyacinth.) Mr. Jones Percivall, 13, Queen's Row, Walworth, Surrey. (Swallow.) (The whole show of Pigeons are highly creditable.)

JUDGES OF POULTRY.

The Reverend Robert Pulleine, The Rectory, Kirkby Wiske, near Thirsk.

George James Andrews, Esq., Dorchester.

Mr. John Baily, Mount Street, Grosvenor Square, London.

Mr. Edward Hewitt, Eden Cottage, Sparkbrook, near Birmingham.

Mr. Thomas Challoner, Burnt Leys, Whitwell, near Worksop.

JUDGES OF PIGEONS.

Mr. T. J. Cottle, Pulteney Villa, Cheltenham.

Mr. Edward Hale, Handsworth.

THE HOUSEHOLD.

IMPERIAL.—Three ounces of cream of tartar, two pounds and a half of loaf sugar, three gallons of boiling water, a dessert-spoonful of grated ginger, three large lemons sliced, and added before it is quite cold. It must stand three days before you bottle it, stirring it two or three times a day. In twelve days after bottling it will be fit to drink.

STUFFED ONIONS.—Take some large onions, boil them till tender, but not to break them; take out just the middle; have ready some minced veal, ham, a little parsley, sweet herbs, pepper, salt, a little nutmeg; fill the middle of the onions quite full with it; brown them before the fire. When sent to table pour a little good gravy over them.

OUR LETTER BOX.

CREVE CŒURS.—WEIGHT OF DORKING CHICKENS.—"Will you inform me through whom I can obtain the names and addresses of the exhibitors of Crève Cœur fowls at the late Paris Exhibition of Poultry? I have some of Captain Squire's Dorkings, hatched 18th of July this year. A cockerel weighs 5 lbs. 4 ozs., and a pullet 4 lbs. 6 ozs. on the 18th of November (four months old). Is this good, and, if kept well, are they likely to make birds of first-rate size and weight?—E. E. P."

[Crève Cœur fowls were exhibited at Paris by M. Chomée Adam, Boulogne-sur-Mer; M. Ribeaucourt, fils, Aumoniades de Ligny (Marne); M. Dubéau, au Thuit-Simer (Eure); M. Letalles, fils, à Chemévières-sur-Marne (Seine et Oise); M. Gérard, Avenue de Ségur, Paris; M. Beaufils, Rue des Fosses St. Marcel, No. 45, Paris; M. Fabre, Directeur de la Ferme Ecole de Saint Privat (Vaucluse); M. Fontaine, à Maisoncelles (Seine et Marne); M. Lebol, Rue Royale, No. 7, Vincennes (Seine); M. Marçais, à Apigné, près Rennes (Ile et Vilaine); M. Deshameaux, à Bayeux, Calvados. You may be well satisfied with your Dorkings. Captain Squire's fowls are known to be good ones. One pound per month is a capital weight. The only thing against them is the time of year, as they do not grow in the winter as in the summer. They must, however, be good birds. See that they are fed early and late.]

LONDON MARKETS.—DECEMBER 8TH.

COVENT GARDEN.

The frost during the week has somewhat interfered with the supplies; but still they have been sufficient for the demand, as business is now, and will be for another week, less brisk until Christmas approaches. Some cargoes of excellent *Oranges* have come to hand with the foreign goods, and also a few boxes of the Sweet-scented *Tangerine* variety. *Pears* now comprise the *Nelis d'Hiver*, *Glout Morceau*, *Beurre d'Aremberg*, and *Chauumontelle*. The *Potato* markets are well supplied, and the advance of last week fully maintained.

POULTRY.

There will be little variation in the markets till Christmas, unless it be that senders may hold back, and that a small advance may be the result. Trade, however, will be dull till then.

Large Fowls 4s. 6d. to 5s. 0d. each.	Pheasants . . 3s. 3d. to 3s. 6d. each.
Smaller do 3s. 6d. to 4s. 0d. "	Ducks . . . 2s. 9d. to 3s. 0d. "
Chickens . . 2s. 3d. to 2s. 9d. "	Geese 6s. 0d. to 7s. 6d. "
Woodcocks 2s. 6d. to 3s. 0d. "	Rabbits . . . 1s. 4d. to 1s. 5d. "
Snipes . . . 1s. 0d. to 1s. 2d. "	Wild ditto 10d. to 1s. "
Partridges . . 2s. 0d. to 2s. 3d. "	Turkeys . . 6s. 0d. to 10s. 6d. "
Hares 2s. 9d. to 3s. 0d. "	Larks 10d. per doz.
Pigeons 8d. to 9d.	

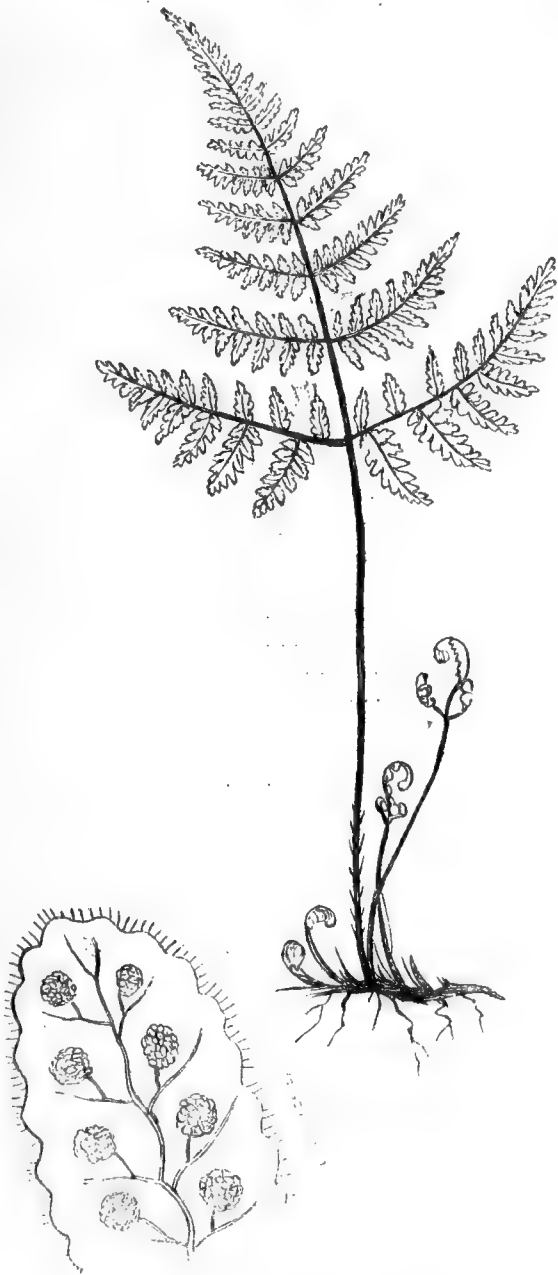
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WEEKLY CALENDAR.

D M	D W	DECEMBER 16—22, 1856.	WEATHER NEAR LONDON IN 1855.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
16	TU	Chaffinches flock.	30.251—29.183	47—29	W.	00	3 a. 8	49 a. 3	9 6	19	3 56	351
17	W	EMBER WEEK.	30.086—30.035	43—35	N.E.	00	4	49	10 21	20	3 26	352
18	TH	Marsh Titmouse sings.	30.214—30.075	40—21	N.E.	00	5	50	11 33	21	2 57	353
19	F	Tachyporus chrysomelinus.	30.264—30.180	32—20	E.	00	5	50	morn.	22	2 27	354
20	S	Sun's declination, 23° 27' s.	30.093—30.918	32—17	E.	00	6	50	0 42	23	1 57	355
21	SUN	4 SUN. IN ADV. ST. THOMAS.	29.803—29.702	26—11	E.	00	6	51	1 52	24	1 27	356
22	M	Tachyporus pubescens.	29.895—29.795	29—9	N.W.	10	7	51	3 4	25	0 57	357

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 46.5°, and 34.5°, respectively. The greatest heat, 58°, occurred on the 16th, in 1849; and the lowest cold, 7°, on the 16th, in 1853. During the period 97 days were fine, and on 99 rain fell.

POLYPO'DIUM CALCA'REUM.



THIS, by modern botanists, was confounded with *P. dryopteris*; but, though much resembling, there is no reasonable doubt of their being two distinct species.

Root dark brown, but stouter and less widely creeping than that of *P. dryopteris*. Its rootlets are almost black, scattered, and wiry. The stem of each frond is firm and stiff, varying in height from six to eighteen inches, and nearly two-thirds of its length being without leaflets. The stalks of the two lower leaflets are so much more stout than the stalks of those above them, that some botanists consider them as two branches, and call it a

three-branched Fern. The unleafleted portion of the stem is stout, pale, very scaly, and bearing numerous small, stalked glands. These glands are found also on the leaflets, and give the whole plant a mealy aspect. The general outline of the frond is nearly equilateral triangular. Leaflets opposite; the lower ones, in very luxuriant specimens, have leaflets alternate and deeply cut (pinnatifid). The upper leaflets are only deeply cut, or lobed; but the edges of both leaflets and lobes are scalloped and fringed with very small, stalked glands. Each leaflet and lobe has a wavy mid-vein, from which proceed very regularly, in pairs, lateral or side-veins; these side-veins are also very regularly forked, and on the upper branch of each fork, about midway between the edge of the leaflet or lobe and its mid-vein, is a circular mass of fructification. The masses become brown and crowded as they ripen. The colour of the entire frond is a very distinguishing mealy, dark green.

It is found only on a limestone soil (whence its specific name, *calcareum*), on mountainous heaths, and in wooded places. We are not aware of its being found native in either Ireland or Scotland; but in England it grows about Matlock Bath, and on the road-side under the Lover's Leap at Buxton, in Derbyshire; at Sheddin Clough, near Burnley, and near Lancaster; at Arncliffe, Gordale, White Scars, near Ingleton, and near Settle, in Yorkshire; on Cheddar Cliffs and Box Quarries, near Bath, in Somersetshire; and in Leigh Woods, near Bristol.

This is not a newly-discovered Fern, for it was known to Clusius, Tabernæmontanus, and Gerarde; but it was first recognised as a native of England by the late President of the Linnæan Society, Sir J. E. Smith. It has been described by botanists under the following names:—*Gymnocarpium Robertianum*, *Lastræa calcarea*, and *L. Robertiana*, *Phegopteris calcarea*, and *Polypodium Robertianum*. In Johnson's edition of Gerarde's *Herbal* it is figured and described as *Dryopteris Tragi*. In English it is known as the *Limestone Polypody*, *Rigid three-branched Polypody*, and *Smith's Fern*.

Mr. W. Reeve says that this Fern, like the *P. alpestre*, is a desirable species for cultivation, and is very scarce. It is pretty, and may be very successfully treated. It will be found to prefer, and, in fact, will not do in any other than, a free, open compost, composed of fibry peat, loam, and vegetable mould, equalised to form two parts, and very old mortar and free lime or sandstone for the other two parts, with a free addition of

silver sand. A good drainage must also be secured, and the plant fixed firmly in the situation it is to remain in. It likes a free supply of water overhead through the summer months, but to be withheld as winter approaches; and it must be ripened off to stand through that season. The above-particularised compost and directions will be suitable either for pot-culture or for cultivation on rockwork, where it will bear moderate exposure to the sun; but, as with the *P. alpestre*, a thoroughly good drainage and a free supply of water will be necessary; the water, of course, not to be used while the sun is shining upon it. It thrives remarkably well in a greenhouse, and may be easily propagated by division.

THE ANNUAL SHOW OF THE SMITHFIELD CLUB was held during the past week at the Baker Street Bazaar as usual. The entries were more numerous than last year, and altogether the Show was better than it has been for some seasons past. It is not within our province to describe or criticise the qualities of the animals which were exhibited; but we may be allowed to observe, in passing, that they presented an appearance much more comfortable to themselves, and less disgusting to the feelings of spectators, than they were wont to do some years ago, when excellence seemed to consist in the quantity of fat and purulent excrescences with which they were covered. The few observations which shall now engage our attention are gathered from the vegetable productions, which formed not the least interesting portion of the Show. It is pleasing to observe the improvement which has also taken place in this department. Some years ago the subjects exhibited in this class were very limited, and confined chiefly to one or two exhibitors, who contented themselves with producing a few specimens of Turnips or Mangold Wurtzel, remarkable for nothing but their monstrosity, and which, like the monstrosities of the animals, were more curious than useful.

Messrs. Peter Lawson and Sons, of Edinburgh, and Great George Street, Westminster, the Queen's seedsmen, had a stand, which covered a large space, and which was remarkable for the variety of interest and the amount of instruction which it furnished. We were pleased to see that a total disregard had been paid to catering for vulgar curiosity, and hence there were no monstrous "Swedes" or gigantic "Mangels." Ranged along the upper tier of the stand were specimens of the most important Cereal Plants, such as Wheats, Barley, and Oats, exhibiting the length and quality of the straw, and the size and colour of the ear. In the second tier we found examples of the Grasses best adapted for the formation of permanent pasture, each being represented by a plant which had attained its full growth, and conveying the most perfect idea of the amount of herbage which it is capable of producing. On the table were arranged large samples of the Cereal grains, some of which were remarkable for their fine quality, and among which we noted the *White Swan Wheat*, weighing 65 lbs. per bushel; a very fine white Wheat; and a red variety, called *Spalding's Prolific*, weighing 63 lbs. per bushel.

Among Oats the most remarkable were the *Providence Oat*, which weighed 45½ lbs. per bushel; and among Barley, the *Chevalier*, weighing 56 lbs. But that which formed the most important, and certainly most valuable, portion of this collection was the Turnips. As we have already stated, they had not been selected for their size; their great value consisted in the important practical results which had been arrived at in their cultivation, furnishing data which every practical agriculturist would do well to make himself acquainted with. To each variety a label was attached, stating the quantity of produce per acre, and the specific gravity of the flesh; and as it will no doubt be important to our readers to become acquainted with these facts, we have pleasure in recording them in full, beginning with those which exhibit the greatest specific gravity, believing, as we do, that therein consists their real value as an article of food.

From the above it will be observed that in Turnips the produce per acre varies from twelve to thirty-one tons, and that the specific gravity ranges from .685 to .893. We believe that the greater the specific gravity of any Turnip, so in proportion is it rich in nutritive principle; and where a Turnip can be found of great specific gravity, which shall produce a greater or even an equal weight per acre to any other variety whose specific gravity is less, so much more valuable is it as an article of food over every other variety by the amount of its specific gravity; and thus we come to the conclusion, that the *Tweedale Purple-top* is a more valuable Turnip by .046 than *Dale's Hybrid*, even making an allowance of .026 for the additional ton per acre, which *Dale's Hybrid* is represented to produce.

TURNIPS.	WEIGHT PER ACRE.	tons	SPECIFIC GRAVITY.
Tweedale Purple-top.....	30		.893
Aberdeen Purple-top	28	"	.831
Dale's Hybrid.....	31	"	.821
Altringham Yellow	24	"	.821
Aberdeen Green-top	26	"	.814
Yellow Stone	25	"	.814
Yellow Malta	23½	"	.814
Tweedale Green-top	26	"	.811
Grey Stone.....	28	"	.803
Skirving's Purple-top	27½	"	.802
Petrosolvosk.....	14	"	.801
Green Globe	27	"	.789
Olenitz Purple	12	"	.787
Lettuce-leaved White Dutch	14½	"	.782
Green Norfolk	25	"	.772
White Globe	23	"	.762
Finland Early.....	18	"	.761
Green-top White Stone...	22	"	.758
Waite's Eclipse	27	"	.752
Cambridgeshire Yellow			
Tankard	26	"	.738
Early Yellow Dutch	13½	"	.732
White Tankard	24	"	.729
Red Tankard	24½	"	.726
Common White Dutch	18	"	.721
Early White Stone.....	21½	"	.714
Pink-top White Dutch	14½	"	.714
Orange Jelly	19	"	.685

At the stand of Messrs. Sutton and Sons, of Reading, there were many fine specimens of Turnips, Mangold Wurtzel, Carrots, and other field roots. Excellent specimens were exhibited of *Sutton's Champion Swede*, which were stated to produce 24 tons 5 cwt. 8 lbs. per acre. Among the collection we observed some large and handsome roots of the *Improved White Swede*, a variety which deserves to be extensively known for the desirable property it possesses of greater rapidity of growth than the other Swedes. The seed from which these specimens were grown was sown on the 8th of July, and, notwithstanding what is considered this out-of-season time for sowing Swedes, the roots were as fine as could be de-

sired from a crop of Swedes which had been sown in May. The great value of this variety, therefore, consists in its being sown late in the season, when the other Swedes may have failed, and producing a crop as great as the other Swedes would have done had they succeeded. We were told that it is perfectly hardy. With this variety of the Messrs. Sutton we contrasted the *Orange Swede* on the stand of Mr. Isaac Wright, of Colchester, which was sown in the middle of July, and which is intended, also, to supply the deficiency caused by the failure of other Swedes; but both in size and quality of the root it appears to be infinitely inferior to the Improved White Swede. It is "shanky" in the neck, and has a long, tapering, and hard base. On this stand we also observed specimens of Grass Seeds, and specimens of the entire plants.

Mr. Chivas, of Chester, exhibited specimens of the *Orange Jelly Turnip* and two roots of *Mangold Wurtzel*.

The collection of Mr. Skirving, of Liverpool, consisted mainly of large specimens of his Swedish Turnip, and a few immense roots of *Long Red* and *Globe Mangold Wurtzel*.

Messrs. Thomas Gibbs and Co., seedsmen to the Club, occupied a large space with large specimens of Mangold Wurtzel and Field Turnips; dried specimens of the pasture Grasses mounted on paper, and inclosed in glazed frames; and ears of Wheat similarly mounted.

Messrs. George Gibbs, of Down Street, Piccadilly, had a large collection of Field Turnips, Mangold Wurtzel, Field Carrots, and other agricultural plants, among which we observed specimens of the Sugar Beet, so extensively used in France for the production of sugar, a manufacture which has been introduced, of late years, to the south of Ireland with some degree of success. We also noticed large roots of the Chicory as grown for the production of the chicory of commerce.

With these few remarks we close our observations on the Show for the present, leaving the notice of such implements as are adapted for domestic use till future opportunities.

CHRYSANTHEMUMS.

I CALLED again on Mr. Salter, of the Versailles Nursery, Hammersmith, which Nursery is now allowed by common consent to be the head-quarters in this country of this fashionable family. I expected to have found him more at leisure than he generally is in the summer; but I reckoned without my host. He is "torn to pieces" at this season, but seems to look all the better for it; and when we know that "rapid consumption" is mere pastime with market-gardeners we may sympathise with Mr. Salter, without considering him in much danger for being obliged, just at this Chrysanthemum season, to dine by candle-light.

There were seventy-five kinds of Pompones alone in the Experimental Garden to bloom this autumn, and we shall have a very fair show of them in-doors till the turn of the new year; but for the last six weeks our curator has been going about more like a man with a humble-bee in his ear than a public functionary, because, as he alleges, "this has been a very bad time of it for them." No sooner did the shoots begin to "top-knot," or bud for bloom, than the late equinoctial rains came upon them, and kept them under till they were housed in a worse condition than ever any of their kind were in this country for the last twenty years; but it was a great consolation to us all when we heard that Mr. Salter had ample cause for complaint on this score. Many of his very best kinds had gone "blind;" but he did not seem to suffer in the least from another disease which spoiled some collections round London, and which affected the plants, like the Potato disease, by withering the foliage.

Mr. Salter's list of Chrysanthemums of all kinds amounts now to 686 sorts, and the last of them is the most curious of all the Pompones, and the very best of them to mix in bouquets. The name is *Ninette*. It branches from the very bottom, every side-branch is of the same length (between three and four inches), and carries one flower only. The colour is pale sulphur, turning white by age, and is just the shape of a button from a little page's close jacket, or three parts of a perfect ball, and the petals overlay each other as closely as the feathers on a pigeon's breast; but the family has become so numerous, that it must be again divided into several heads, clans, or sections. The old breeds from China are called the *Large Chrysanthemums*, which are subdivided into *incurved*, that is, those with the petals turned inwards to the centre of the flower, and *not incurved*, which includes all other forms at present.

Pompones is the next division, and means the small Chrysanthemums as compared with the old stock. *Lilliputians*, or Matricaria-like flowers (*Matricarioides*), include all the very smallest, and these are only about half the size of Pompones proper.

Then there are *Hybrids*, and these are larger than true Pompones, being crosses between the old breed and the new. This new breed is a spontaneous variation, like that of the Dahlia, without the aid of the pollen from another section or kind, the Chusan Daisy Chrysanthemum being the first parent.

When seedlings are got from mixing the pollen of one kind of Pompones with another kind of Pompones, all that are worth keeping of them are those of the size of Pompones or the next lowest Lilliputian. All the seedlings which are larger than the parent Pompones are generally wild, ragged weeds, and good for nothing.

The last main section is called *Anemone-flowered*, and in this section are extremely pretty new kinds; but some people do not like them, while others prefer them to all others. Mr. Salter told me that there is a rage for really good Anemone-flowered kinds, and that the public taste here and on the Continent is widely different on all florists' flowers, and more particularly on this family and this section of it; and he instanced his old seedlings in the large class, *Fleur de Marie* and *Nancy de Sermet*, the two finest kinds in that class, but differing so much in florists' character, that in England ten plants of *Fleur de Marie* sold for one of *Nancy de Sermet*, while on the Continent the latter was twelve or fifteen times more in demand. The English taste, at present, for Anemone-flowered kinds is to have but one single row of guard petals round the honey-combed or Anemone-looking centre, and if the guard happens to be in contrast of colour with the centre all the better; but it is not insisted on.

The best kind that is "coming out" next season, according to my eye, is of the same colour all over, guard and centre. That colour was between lilac and French white when I saw it; but the whole race is changeable in this respect, and, whatever the first tints may be, they never get deeper, but always paler, and the warmer the place is in which they are flowered, the paler every one of the tints comes at last.

Mr. Salter has a large house, into which he takes as many of the new kinds, and as many of the leading sorts of the older ones, as he can put together. Just as they are coming into flower in the open borders he takes them up with good balls, and places them on the borders in this house, or "winter garden," fills in between the balls, with walks in different directions to get on for seeing and examining them in detail. He does not sell any of these; they are only to show you the best kinds. Smaller plants are kept in pots for selling.

If gardeners could bloom them on this plan, without ever being in pots at all, they would make ten times more show with them, and at much less damage to

other plants. How many thousands of most useful plants have been ruined this very autumn by being too much together the moment they were "housed," to make room for flowering Chrysanthemums!

The best conditions under which to flower Chrysanthemums in-doors to perfection would be to have them in a separate house, which would admit as much air to them *day and night* as if they were in the open air altogether, the borders and walks to be as dry as if for ripening Melons, and the balls about the roots never to be the least dry during the whole time they are in bloom, and since the bloom-buds became prominent. Then the next best plan is the nearest one can get to these conditions.

The first best acquisition I shall name is a true sport from *Formosum*, an old one of the large kind, which most growers know, being a great favourite. It has a very pale sulphur flower, which turns to a soft whiteness at last. Well, this has sported to a deep golden yellow, and I believe it is to be called *Nonpareil*, a very appropriate name. It will not come out till next season. *President Morel*, bright red and orange centre. *Anemone*, turning more into buff as it gets older, is a first-rate one for next year. *Brunette*, a stiff, erect habit, and yellow Anemone flower. *Roquileure*, Anemone flower, with orange centre, and guard of quilled florets of a rosy red and orange, a very droll-looking flower, which will please many next year. *Desdemona* next year, a large salmon and buff. *Le Bourreau des Cranes*, salmon red, with golden tips, fine next year. It is one of the hybrids.

The following are the best large Chrysanthemums which were sold last season:—*Alfred Salter*, a large, first-rate flower, a blush pink, the best of that class, and with incurved petals; *Fleurette*, a very fine lilac purple; *Geneviève*, blush, turning to white; *Mustapha*, a tall crimson; *Valerie*, dark reddish buff and half Anemone; and *Vulcain*, a fine red carmine.

The following are the best new Pompones of last summer:—*Abel*, cinnamon and yellow centre, of the Anemone section; *Comte de Morny*, very good violet flower; *Fauchette*, rosy lilac and white centre; *Boule de Neige*, a pure white Anemone, and the best of them; *François*, orange red; *Général Canrobert*, fine pale yellow; *Louis XIV.*, chrome yellow, turning to white; *Toinette*, a light rose Anemone, with large guard petals; and *Scarlet Gem*, which is my own peculiar favourite for a flower-bed to succeed a bed of the American Groundsel early in September. It is a dark crimson scarlet flower, a very dwarf bushy plant, which requires no sticks or tying out for pot or bed; but there is a newer one of the Anemones which will take the lead. It has but a single row of guard petals, which are large and pure white, and a pale yellow centre, and I think the name is *Madame Dentier*, or some such name.

Out of all Mr. Salter's old large Chrysanthemums I noted the following as having flowered the best this season, while many more of this class were hardly fit to exhibit, and, therefore, may be the best for a bad season:—*Auguste Mie*, very fine this year, red, tipped with gold; *Beauty*, a peach blush; *Bossuet*, fine rosy carmine; *Cassy*, orange and rose; *Dupont de l'Eure*, every one's favourite, orange and carmine; *Eole*, rosy primrose, very good; *Etoile Polaire*, a fine golden yellow; *Hermione*, another fine blush, tipped with purple in a cool place, next to *Alfred Salter* and *Queen of England* (the latter did not fill up so well as usual this dull season); *Le Prophète*, a very fine large flower, of a deep fawn colour; *l'Emir*, a reddish crimson; *Miss Kate*, a fine lilac; *Mount Etna*, red, of course; *Pio Nono*, very good Indian red, with golden points; *Plutus*, a very fine golden flower; *Rosa Mystica*, creamy rose; *Stellaris Globosa*, very good, a crimson and white; *Trilby*, a blush; *Versailles Defiance*, rosy lilac; and *Zephyr*, salmon red

and yellow. Not one of these seemed to flinch; perhaps they are naturally of a more hardy constitution, and, being so, are proof against bad seasons.

The following old Anemone-flowered kinds turned out equally well; but my own experience would say that all kinds of the Anemone-flowered are more hardy than the full flowers; and that I would account for from their being *reverted*, that is, in the first stage from a highly artificial state to that of the wild, natural form of the species. *Fleur de Marie*, the best white; *Nancy de Sermet*, second best white; *Gluck*, fine golden orange; *Marguerite de Versailles*, blush; *Madame Gorderau*, sulphur; *Diamant de Versailles*, fine white guard and rosy centre; *Regulus*, cinnamon; *Romulus*, rosy lilac and rose; *Marguerite*, bright rose guard, with a lighter centre.

Now, if we turn to the Pompones of older standing, which of them kept up their credit the most under the severe trials of this autumn? They are the following:—*Adele Prissette*, a newish tall lilac, by the way; *Aigle d'Or*—take this "all in all," and perhaps it will turn out the best of all the yellow Pompones; *Alexandre Pele*, a bronzy salmon; *Arc-en-ciel*, a very early one of a carmine colour; *Auréole*, very good, between crimson and scarlet, or the nearest we have to that colour; *Clebois*, a dwarf, stiff, small plant, with rosy carmine and light flowers; *Créole*, the last of the hybrids, very free bloomer, and of a dark salmon colour; *Delilah*, very good indeed, white, edged with rose, but heat spoils it; *Durn-flet*, another excellent kind, with rosy carmine flowers; *Il Brasiero*, very good, in the way of *Mignonette*; *Madame Pichaud*, white and crimson; *Modèle* stood the best of all the whites; *Perle du Prado*, peach; *Requiqui*, still the best of the dark violets; *Trophée* is nearly as good as the last, and of a rosy mottled cast; and *Sainte Thais* is a first-rate flower, of a kind of chestnut colour which is difficult to define. All these, and *Ariane*, a good Anemone, with a light red and yellow centre, were the best in the whole collection.

In the Experimental Garden *Marguerite de Valois* was the best Anemone-shaped we had this year; a whitish guard, and the richest golden yellow centre you ever saw. We have made several converts to the Anemone kinds by this one flower. *Pluie d'Or* was very early, very dwarf, and about as good as *Drin Drin*, which was also early, and very good. *Autumnum*, the nearest to Spanish brown, very good also. *Brilliant* and *Bob*, two of the same cast of dark crimson and orange, were particularly good. *Bob* is a notorious radical; he sports and changes about so. *La Vogue*, golden yellow, and *Cedo Nulli*, white, with brown tips, were both best. *Cedo Nulli* was better with me than last year; also better in Regent Street than even the splendid white one of it there from D. MacNiel, Esq., last year; but it is always better from the open air. *President* was also very good with us; but some fifty kinds did not open a bloom worth looking at out of doors. *Colibri*, a slender bush, is an extraordinary bloomer, but not nearly so good in-doors. *Le Nain Bébe* seems the hardiest of them all, and does much better out of doors, and is the only one of them that has a pleasant scent. *Madame Roussillon* and *Requiqui*, with *Cedo Nulli*, were very good at the last meeting of the Horticultural Society, from Mr. Shrimpton, gardener to A. J. Doxat, Esq., Putney Heath.

D. BEATON.

INQUIRIES RELATIVE TO CULTIVATION AND HEATING.

"I HAVE recently received from Paris seeds of *Microsperma Bartonoides* and *Sphenogyne speciosa*. Will you give directions for growing them? Will they do to plant out in summer? I saw them last June in great beauty in the

Palace of Industry at Paris. The beds out of doors everywhere were gay with, I think, Venus's Looking-glass. Will it do as well here? It is old and hardy. When should it be sown? A few papers on flower-gardens, with plans for humble folks, would be acceptable to many. A garden of 50 feet, perhaps, wide, which we wish to plant round, so as to hide the neighbouring houses, and then place, perhaps, a dozen beds and two or three rustic baskets, which we wish to keep bright and gay as early and late as we can with annuals and bulbs, succeeded by more annuals and greenhouse plants. We have not bedding-plants by the thousand; some few we keep through the winter. It is very difficult for those who thoroughly understand a subject, and are accustomed to do things on a large scale, to write for ignorant persons; but if you could, by the time the period arrives for spring-work, give us a list for, say a dozen beds, the best Verbenas, Geraniums, Petunias, &c., you would do good service. It seems as if a plant or two of each, purchased early in the spring, could, with hot water underneath, be made to produce cuttings for a bed. When should the *Sanvitalia* be sown? Is there any seedsman who can be depended on? we are badly off here. Seeds never come up bought here. *Queen Victoria* and *Sir Walter Scott* Crocuses, 4s. 2d. a hundred, and everything else dear and bad. I have been anxiously expecting more information on heating by gas from Vincent Litchfield. What is the cost of his plan for a greenhouse, say 20 feet by 10 feet? He has not given us any dimensions in his plan, page 96 of this half-year. I cannot understand how the gas can ever heat the water; it looks so far off from the boiler. I should think, also, that the air-pipe inside the water-pipe would be difficult to get at to repair. I have also been hoping to hear more of a system of gas-heating, as found in page 223 of the last volume, June 24th, 1856, by Alfred Kimberley, Edgbaston, and only wish I were nearer to go and see it. The cost of putting up he does not say, and there is no plan given. To begin, he has four fish-tail jets. This is wise, as I should fancy one or more could be lighted, reducing the number when the water was hot, and being less likely to go out in the night than several jets from a ring. Still there may be a want just at the worst time. He says, 'so sure as we have gas in our houses and streets,' &c.; but with us it has failed in very severe frosts. He does not say the number of feet of gas consumed; he says 30s. for three months, but I suspect gas is cheaper there than with us. Can you give us further details of this plan also, so that we could get either the first or second plan made in the country? knowing the expense of every part; the shape, size, and price of boiler; the size and price of each sort of pipe per foot; the price of galvanized cistern holding four quarts. Could you also give more particulars of Mr. R. Bradley's (King's Bromley) mode of heating? Of what are the pipes composed? Three go right up the back of the fire-place; is this better than a small cistern? I have a small greenhouse placed on a level with my living rooms, and if I could heat it from my kitchen fire it would be very desirable; but the kitchen fire is out at night, when heat is most required. How is the water to be drawn off in the mode described by Mr. R. Bradley, page 36, 'Greenhouses for the Many?' and is there any occasion for a steam-pipe to prevent explosion? My kitchen fire-place is eight feet from the wall against which my greenhouse is built, and there is to be added to this the seven or eight feet difference in the level. Can you advise me in the cheapest and best mode of heating? The house is 10 feet by 20 feet; kitchen fire or gas? The inclosed is a leaf I bought for a plant of *Tacsonia mollissima*; it has never bloomed: what is the reason? does it require heat? Is a small, velvety-leaf Geranium, with a small white blossom and a strong smell of peppermint, worth growing? I have made in this note many inquiries; but, if it is Mr. Beaton who undertakes this branch, I must beg him to consider me a countrywoman, and one Scotch person is always willing to help another.—JANE FORREST, *Forrest Lodge*."

[The Editor reposed on his sofa for half an hour after reading the above. He was bewildered, and by mistake sent it to Mr. Fish, who thus comments upon it.]

I hardly know how this letter has come in my way.

Most likely Mr. Beaton would have been able more satisfactorily to meet its inquiries. His well-known gallantry to the ladies, not to speak of the appeal to his nationality, would have prompted him to more than usual exertion. I feel certain that the same motives will cause him to supplement my deficiencies, when, before returning it, I take a passing notice of its contents.

Our old fun-loving friend, *Mr. Punch*, ought to be made to beg pardon on bended knee. He will have it that the gist of all ladies' letters is thrown into a postscript, and that it would be impossible for them to write a letter without one. Now, this letter is only one of many received from ladies without such tail appendage. The appositeness of the inquiries, the shrewdness of the reasoning, and the thorough determination to know all about expense and detail before commencing operations, are well worthy of the imitation of the would-be lords of the creation.

Without the postscript appendage there is something rather striking in its appeal to nationality at its close. Our correspondent cannot be quite aware of the very smooth and easy sailing of our beautiful craft, or her natural shrewdness would have led her to suspect that in such a vessel more than one Scotchman would have found a place as an oarsman, and had no desire to leave or "gang back again." Not but that he often thinks of old scenes; not but that he may agree with the poet, that he must be a "wretch" who has no yearning for fatherland, and the associations of kindred and of early years; and yet we know our correspondent will excuse us if we confess to a want of sympathy in most of the present movements in aid of a Scottish nationality, which, divested of platitude and fustian, and read correctly, means little else than a clinging to old national prejudices. Then these prejudices, presented in an attractive form, and clouded with the halo of ancestral, old, bygone deeds—nothing can be more effectual for blinding a people to its real necessities and shortcomings, and thus leaving it far behind its neighbours in progress and refinement, who have had the good sense to throw all such prejudices to the winds. No Scotchman in our days, if he has been a worthy member of society, has had any reason to complain of an English prejudice against him—quite the reverse. However pleased, then, I am to attend, as far as I can, to the inquiries of our Scottish correspondent, and to wish that many more letters of inquiry would reach us from north of the Tweed, yet the mere feeling of gratitude for kindness received, not to speak of common justice, would prompt me to pay at least an equal attention to inquiries from the south. It is high time that in these islands all nationality should be chiefly directed to provoking and stimulating each other as neighbours to run vigorously the same race of domestic comfort and social improvement. At some future time I may notice some of the very common things in which our northern friends are behind their southern friends, so far as may be introduced under the general scope of this work; meanwhile, I will attend to the wants of our correspondent.

SOWING FLOWER-SEEDS.—ADVERTISING.—I believe that every seedsman who advertises in these pages would send out true seed as far as he could judge of it himself. There have, no doubt, been many rogueries in the seed trade, the chief of which was the mixing of kiln-dried dead seed with the fresh and good. This is, no doubt, very wrong; but the public was also to blame, because it could not be satisfied without quantity for its money. No man can long advertise a bad article with impunity. The benefit of advertising is, that instead of having a shop-window of so many feet in a certain street, you extend the shop-window over all the parishes and counties in the land. The advertiser who sends out a bad article would soon find a scarcity of fresh dupes to pay for the extension of his shop by advertising. Some

constant advertisers have assured me that their profits are just in proportion to the *goodness* of the articles advertised, as thus only do they obtain and keep the confidence of the public. It is against our rules to recommend one tradesman in preference to another. I believe seedsmen are just as honest as other tradesmen; and I believe, further, that failures are oftener the fault of the sower than of the seed. I have often seen seed taken out of the same packet so sown that not one appeared in one place, while a perfect thicket of seeds came up in another. Small seeds are apt to be buried too deep, or they are left on the surface, and a burning sun, with a north wind, scorches them, or the soil is stiff, and, when wet, wraps them round so tightly that no air can get at them. Small seeds should never be covered more than their own thickness. The soil should be made very fine before sowing. If the soil is the least adhesive, a little fine, sandy soil should be used for covering, and then success will be more certain if the patch is covered with a pot, which will secure the spot from parching winds, &c. All these are pleasant occupations for a lady. With all this trouble, if you want a fine, regular bed of some pretty annual, you may have to transplant and fill in the thinner places. When much is done in this way with small annuals, I would prefer sowing them on a border by themselves, protecting them with mats, hurdles, or branches until they are well up, and then transplanting them into beds. By this means the beds are in fine order, and they can be planted regularly at once. If the soil is stiffish loam at the bottom, and the seeds are sown in an inch or two of sandy loam and leaf-mould, the plants will lift nicely in little patches, and never feel the removal. When the soil is light and sandy, a little leaf-mould or very decayed dung mixed with it will cause the roots to adhere. The seeds may be sown in rows from three to six inches apart.

ANNUALS FOR FLOWER-GARDEN.—If you would turn back to previous volumes you would find full information on this subject, and very likely the matter may be again discussed before sowing-time in the spring. The following may suffice for the present:—

MICROSPERMA BARTONIOIDES.—This is a cream-coloured Mexican annual, with small seeds, and growing about nine inches in height. I thought, at one time, it would be an Asterwort; but I understand now that it belongs to the acrid Loasads, and has some resemblance, I believe (for I have not seen it), to a rough but pretty annual, the *Bartonia aurea*, which makes a fine blaze of gold colour. As this *Microsperma* is still a little scarce, it would be best to sow your seeds carefully in pots in your greenhouse about the middle of March; prick off into small pots, and plant out after the middle of May. I have no doubt but that ultimately it may be sown out of doors at the end of April if covered with a pot, and protected from severe weather until the plants get good hold.

SPHENOGYNE SPECIOSA.—I have had a fine show of this beauty sown out of doors in light, fine-wrought soil in April; but the best bed I ever had was thus managed:—About a quarter of an inch of soil, with all the grass, was removed from some turfs, which were taken up about one inch and a half thick. These were cut into pieces two inches and a half square, and a shallow hole, an inch or so in diameter, made in the centre of each; on that a little sandy soil was sprinkled, and three or four seeds placed in each hole and covered with fine soil, and then these were all packed together on leaf-mould, with a sash of glass over them, at the end of March. When the plants were up, air was given as needed, and by the second week in May the pieces were planted in a bed about seven inches apart.

SANVITALIA PROCUMBENS.—The treatment of this was given a few weeks ago. This and *Saponaria*

Calabrica are the two very best annuals for a bed, as, with a little care, they will bloom to the end of the season. Both may be sown out of doors at the beginning of April, especially if protected with pots. I prefer sowing them both on a border, or on a slight hotbed of spent leaves, in the end of March, and planting them out in little patches, that is, with three to half a dozen plants in a patch in May: it is thus easier to get the beds uniform and regular. The *Bartonia aurea* I have treated in a similar manner, but it does best either sown in pots and turned out whole, or sown where it is to stand, and protected a little at first.

The Venus's Looking-glass (*Campanula speculum*, or rather, *Specularia speculum*) will thrive quite as well here as in Paris. This and Venus's Navelwort (*Omphalodes*), *Cacalia coccinea*, *Nemophila insignis*, *N. maculata*, and *N. atomaria*, *Collinsia bicolor* and *C. grandiflora*, *Clarkia pulchella* and *pulchella alba*, *Eschscholtzia Californica* and *tenuifolia*, *Virginian Stock*, and *Sweet Alyssum*, are some of the best low-growing annuals for forming beds, which, if sown in poor soil at the beginning of September, may either be planted into the beds at the end of October, or remain where sown until spring. A succession sowing may be made at the end of March. To these I might have added the *Candytufts*, &c. For beds about two feet in height, and to be treated in the same manner, we may select *Godetia Lindleyi*, *grandiflora*, *rubicunda*, and *rosea alba*.

VISCARIA OCULATA, **ERYSIMUM PEROFKIANUM**, &c. —For sowing in the open air at the end of March, I need hardly specify *Catchflies*, *Larkspurs*, *Nasturtiums*, *Sweet Peas*; and in open soil in April, and under glass at the end of March, of *China Asters*, *Marigolds*, *Stocks*. All these hardy annuals will be useful in giving bloom before the regular bedding-plants are in perfection; but they are more fitted for bedding-plant groups than for bulbs, unless the bulbs are concentrated chiefly in the corners or round the edges of the beds.

PLANS OF SMALL FLOWER-GARDENS.—Much has already been done in this way, and, besides the expense, it never yet has answered the purpose. Were we to give a plan for a flower-garden for a place fifty feet by one hundred that would suit that place, the next-door neighbour would want a different plan for his or hers, and very likely quite correctly, as the circumstances might be different. After all, most likely a plan contrived by the "lady of the house" would be more appropriate than ours, and we feel that at present it is best for us to keep to general principles of taste, and to give what assistance in the way of criticism we can. I suppose your space is much longer than it is wide—then have a clump for a centre, and have two wings equal, having the width of the clumps proportionate to the width of grass between them. We have nothing to say particularly against shutting out the view of your garden from the house of your neighbour, as seclusion may be extra desirable; but when I traversed the suburbs of Edinburgh in May, and found one front garden blocked up from all view of the passers-by by a wall, and the next garden merely protected by a neat iron fence, I could not help thinking how much more likely I should find kind, open hearted people in the one tenement than in the other.

RUSTIC-WORK IN FLOWER-GARDENS.—Unless when a strong contrast is desirable it is seldom that rough baskets, root-clumps, &c., come in well near the artistic lines of a house. A beautiful basket or a vase will be best there. Rough gardening comes in best in appropriate ground, and at a distance from the house. I lately saw a striking example of this, though I do not feel at liberty to name the place at present. A beautiful piece of rough scenery is presented, quite distinct from the general flower-garden, as a Fernery; roots, &c., are used for rough work on the beautiful lawn also; and, besides being out of place, it creates monotonous sameness, when

a more simple system would have given the charms of fitness and propriety.

COPIOUS LISTS of the best plants you specify have already been given, and will be referred to, perhaps, before spring. If you have not had practice in propagating, do not expect too much from one plant in your first season's experience. Take every means you can to see these processes conducted, and also the mode of filling beds, &c., in good gardens, and then you will find our pages more interesting. Only show you are interested, and you will find that gardeners part much easier with their practical lore than our friends the lawyers.

The *Tacsonia mollissima* is yet too young I suspect. The Geranium is purely a matter of taste.

HEATING BY GAS AND BY KITCHEN BOILER.—I have left little room for this, and perhaps it is as well, as it would be best that the gentleman alluded to by our correspondent should give a definite reply to the inquiries, as I never have had a gas affair under my direct management. One hint I would give in the way of expense. Such details can never be any more than guides, unless for things in such demand that you can buy them all complete at once. Some of our friends think it must be a pleasure to hunt over every volume to get at something they want to know more about. Not long ago a request was made to hunt up a varied list from THE COTTAGE GARDENER, and benevolently adding, "they were sure it would be a pleasure to you." Now, once for all, let me state that there is nothing more irksome than hunting for references without dates, and nothing that requires more time and care than making out a list of any tribe of plants as suitable for certain circumstances. Our present correspondent sets a better example.

The plans of Mr. Kimberley, of Edgbaston, and Mr. Vincent Litchfield, are so far the same, that each takes a heating or smoke-pipe through the hot-water pipe. The plan at page 96 leaves little to be desired. The burners might be moved nearer the boiler if thought desirable; but that will not be so necessary as if there had been no case round the burners. The smoke, also, in the pipe will be lessened, as it will get deposited on the bottom of the boiler and the sides of the iron case to a great extent. A convenience for cleaning it out at times with a wire brush would be an advantage. I have no doubt that with these gentlemen the system answers well. When the details are given our correspondent will be better able to decide. Meantime, with her seeming conveniences, I should rather be inclined to use for her little greenhouse the kitchen boiler, as it is already there, and thus I would proceed, keeping economy in view.

The top of the boiler is close, of course, and is to be furnished with a supply cistern the same height as the highest point of the pipes in the greenhouse. Were the house to be heated constantly a cistern at the farthest extremity would keep the boiler supplied; but, as it would be desirable to shut off the heat entirely at times, a cistern for itself would be advisable. Fix two pipes in the boiler, one near the top, and one near the bottom; if an inch in diameter, and iron, they will be large enough. Pipes of iron must extend at least a couple of feet from the boiler if joined to it near the fire; from thence, until they enter the house, it matters not whether the pipes are lead or iron. When you get to the house you will need forty feet of four-inch pipe, or sixty feet of three-inch pipe, and that may be of tin or galvanized iron, the same as if you were heating by gas, if you do not mind them wearing out. I recommend cast metal for ultimate economy. Common taps with small pipes would let the heat off and on as desired. In severe weather the heat could be admitted to the greenhouse until bed-time; then the fuel could be gathered close about the boiler, and an iron plate, made like a large damper, would separate the fuel from the rest of the

grate, and confine it round the boiler. I am open to conviction, but I believe, at present, this would be the cheapest mode.

R. FISH.

CULTURE OF THE EXOTIC HEATHS.

(Continued from page 165.)

POSTPONING until next week our promised list of Heaths, we now proceed with their

SUMMER MANAGEMENT.—This season, I consider, commences at the time Heaths may be set out of doors up to the time when they must be removed into the greenhouse or pit. Potting and watering have been fully described in a former paper; it therefore remains to describe the situation in which they should be placed during the summer. The best situation is one behind a low hedge or wall, and the best aspect is one where the sun does not shine upon the plants and pots. After ten o'clock in the forenoon I do not approve of an entirely north aspect, and for this reason—that in such a position the soil scarcely ever becomes dry; and the consequence is, the pots and surface of the soil are covered thickly with moss and lichens, which cannot be healthy for the plants; besides which the plants grow weakly, and are more subject to the attacks of mildew, for want of light and air. On the other hand, if the plants are fully exposed to a summer's sun they require watering so often that the least neglect is almost fatal, and the leaves frequently are browned with excess of sunlight. Hence such a situation as I have mentioned above is by far the most preferable. If, however, such a position cannot be had, then shading must be resorted to.

I remember some years since visiting Messrs. Rollison's nursery in summer, and there I saw their fine large specimen Heaths sheltered from the summer's sun by being placed under some long glazed lights or frames, supported above the plants by a row of thick stakes. When the sun shone hot these lights were shaded by thin mats. It is evident, in such a position, that there would be shelter not only from the sun, but also from excessively heavy thunder-showers or long-continued rains. Messrs. Rollison are well known as among the most successful growers of Heaths round London. Many of the large nursery growers place their young Heaths in beds during summer, placing them nearly close together. The plants themselves, so placed, shelter the pots and soil from the sun; and, to make doubly sure, they place a ridge of coal-ashes round the outside row of pots, so that the soil is kept constantly cool, and, with a due supply of water, constantly moist. I need scarcely inform the intelligent grower that whenever plants are set out of doors it is highly necessary to set them upon a thick bed of ashes, in order to keep worms out of the pots.

I visited a garden in Yorkshire once, and observed the Heaths placed during summer upon a plot of ground paved with flag-stones. The gardener, finding his Heaths constantly flagging, adopted the method of packing moss amongst the pots, or, in other words, plunging them in that material. The plants when I saw them were as healthy, fresh, and green as could be; and, where moss can be obtained plentifully, such a method I consider to be a good one. Another expedient is to place each of the pots in larger ones, which causes a coolness to the inclosed pot and soil, a state always desirable, but more especially in summer. Some gardeners adopt the plan of plunging their Heaths in coal-ashes level with the rims of the pots; but I cannot approve of this as a general rule, for, without very great care, the pots are liable to be water-logged and the soil wet; and soddened circumstances are always injurious and prejudicial to the health of any plants, but more

especially such fine-rooted species as Heaths. Having fixed upon the best position circumstances will allow, and having taken every precaution to shelter the plants from excessive heat and heavy rains, the grower may rest assured, in nine cases out of ten, his plants will pass through the summer safely, and be ready, when the season arrives, to be removed into the greenhouse in renewed health and strength.

It may be necessary to go over them two or three times to clean the surface of the soil of moss, lichens, and weeds. When that is done stir the surface gently, and if the soil is much below the rims of the pots add a thin layer of fresh soil. These periodical cleansings not only add to the health of the plants, but also give them a neat, tidy appearance, and show that the grower has a regard for his plants even when out of doors.

WINTER MANAGEMENT.—This season I comprehend from the time when the plants are brought into the greenhouse up to the time when they are placed out of doors again, so that the summer may be considered their life out of doors, and the winter their life in-doors. When the weather becomes too cold for the plants to be safe in the open air, then prepare, without delay, for their removal. In the first place, the greenhouse and pit should be emptied of their summer inhabitants, and be thoroughly cleansed. Every part that will admit of it should be white-washed, adding to the lime a small quantity of sulphur; then scrub the stages and floors, and see that the glass is in good repair and waterproof. After this purifying process has been gone through, set the house and pit open for a day or two to dry thoroughly. In the meantime go over the Heaths, let the soil be stirred, and the surface renewed, the pots also well scraped and scrubbed with a hard brush, making them as clean and bright as new ones. Look to the drainage. If the hole is stopped up with soil, and worm-casts appear, turn the ball out of the pot; catch, if possible, the worms, and destroy them; and clear away the fine soil amongst the drainage, leaving the egress of the superfluous moisture open and clear. There must be no slurring over these points, for upon their being properly, diligently, and firmly attended to depends the health of the plants during the winter.

When all are ready, that is, the house and the plants, choose a rather dull, cloudy day, and rapidly remove the plants into the house: there again bring system into play. Choose such plants as are fit for positions the farthest from the front first; place them so that the branches of each plant do not touch its neighbours. The grower had far better throw away half his stock than crowd them on the stage or in the pit. I know it requires a considerable amount of courage and resolution to cast away plants that have, probably, been nursed and cared for, perhaps, for years; but let the grower reflect for a moment, and he will be convinced it is better to do so than injure the whole of his stock. After the plants are all arranged in their winter quarters let the floor be washed over, and all left clean. Then, should the weather be mild, give plenty of air every day, and give water rather abundantly for a time, always observing that each plant is watered according to its individual wants. Indiscriminate watering is very injudicious, especially in winter. Give more to the free-growing species than to such as are slow in growth; but observe that all are kept moist. About every six weeks go over the whole stock, and clear the surface of the soil of all decaying leaves, moss, &c.

By way of making a show it is a good plan to place a few of the handsomest species on empty pots, elevating them as stars above the rest. Such plants so placed break the uniformity of the rest, giving a pleasing and allowable variety to the appearance of the collection. The heat necessary for the Heath is very moderate during winter. The thermometer in severe frost may

be allowed to fall to 33°, that is, just one degree above the freezing point. Air should be given on warm days sufficient to lower the heat to that out of doors; indeed, Heaths cannot be kept too cool during winter. I have frequently, when there was no appearance of frost, left air on all night with the best effect. After a severe frosty night the sun often breaks out clear, and then the thermometer in the house rises rapidly. Though it may be frosty out of doors, yet in such a case air must be given to keep down the internal heat. Heaths will bear two or three degrees of frost without injury. I have had the pots frozen to the stage so firmly that they could not be removed without breaking the pots; yet the plants were not injured. Supposing part of the collection is in a pit, let the sides be well banked up either with earth or litter well beaten in. If such embankment is thatched with straw no frost can penetrate it. When severe frost is apprehended cover the glass well up with short straw and mats. The best plan is first to place a single mat on the glass, then a covering of short, dry straw two or three inches thick, then another good strong mat over that, and let these last be firmly fastened down, so as to prevent their being blown off during the night. If the next day should prove very dull and very frosty the covering may be allowed to remain on. If a heavy fall of snow takes place, with a continued frost, let the whole remain. Snow itself is an excellent protector from frost. Observe, however, at the first opportunity to remove the coverings, to give light to the Heaths in the pit. I have, however, known Heaths covered up closely for a fortnight or three weeks without any perceptible injury. It is not advisable, though, to keep them imprisoned in darkness longer than is absolutely necessary.

As soon as a thaw takes place remove the coverings, sweep the glass clean, and draw the lights clean off the pit. Do this every day, but cover up securely at night; for our climate is so uncertain that it is better to be safe, by taking the precaution to cover up every night, than to run the risk of being caught by a severe frost some morning early before daylight. Plants in pits require very little water during winter. When the lights are off on a fine day an opportunity is afforded to look them over and give them the necessary supply.

As a matter of course, as the season advances towards spring, less fire will be needed for the greenhouse, and less covering for the pit. The cultivator, however, should always be on the alert, and, if frost is likely or is taking place, apply immediately the necessary amount of protection.

T. APPLEBY.

(To be continued.)

EXCESSIVE USE OF THE KNIFE.—PLANTING VINES AT THE ENDS OF THE VINERY.

I AM induced to make the following observations on the strength of what I saw in a Vinery here. The house is forty feet long, has eight Vines, each Vine has four rods. Some of the Vines had sixty bunches, and there were altogether about four hundred bunches of good *Black Hamburgh Grapes*. I do not boast of this quantity, nor am I an advocate for heavy cropping; but, seeing how they had been handled previously, and their present forwardness, I resolved to let them take their swing. The border has not been renewed for the last seventeen years, at which time it was made and planted, and is under a principal walk of the kitchen-garden. The Vines have invariably carried the same quantity of fruit as there is this year. What I observe has been effected in this Vinery merely by "chance" serves to confirm the observation that often by accident we are brought to a knowledge of the truth.

We see borders made of the richest stuff possible; the Vines are planted in it, and make wonderful growths, so pleasing to the gardener; but by-and-by he comes, and with

his knife slashes them down. This he repeats till they are gradually brought to the top of the house. About this time he gets some wonderful bunches, and gets to himself a wonderful name as a Grape-grower. Presently "something comes over" his Vines; they do not do as they ought to do. Nevertheless, he slashes and spurs away with his knife, pours on tank-water and other stimulants, but yet no great bunches arrive. Ultimately he comes to the conclusion that the roots want examining; and here, again, his assumed quackery of root pruning suits his purpose. He cuts down his rods, and altogether makes, as it were, new plants. Away they go for another fine bunch or two, and once more he considers that he has traced the cause of the failure and effected the cure.

But this improvement is only for other two or three years, when, by the old quackery, down come their colours again. He has now so far got rid of lunacy, resumed common sense, and is quiet. His argument now is, Nature must be studied, and he says, "If I had allowed the rods to extend in proportion to their roots, my trouble, for the most part, might have been saved."

It is, in my opinion, altogether inconsistent with Nature and common sense that Vines thus treated will continue to give great bunches. On the contrary, I believe they will ultimately dwindle away to poor things if their organs of nutrition are not discriminately equalized both at the roots and the branches. I appeal to the results of practice, and to the laws of vegetable physiology, if what I have attempted to describe is not downright ruin to the constitution of the Vine, as well as to any other plant. As another instance, have we not abundant proof of the injudicious use of the knife in almost every young Peach-tree we have from a nursery? Disease is grafted in their constitution; every good gardener remarks it, and every ruined tree confirms it.

I would suggest that, instead of planting Vines in front, as is the common error, we should plant them at the ends, and train longitudinally, beginning to train the rods along the front when lowest, and then backwards and forwards till the top is reached. In this case, the border being at the end may be outside the garden, even into the dung-heap, where it can be handled at pleasure, and do away with the unsightly litter necessary for their protection, and which is always an eyesore where the kitchen-garden is resorted to for recreation.

My noble employer, Viscount Clifden, contemplates erecting a Vinery 120 feet long, which will have the finest site the "Green Isle" can give. I shall alarm the "natives," and get myself into terrible ridicule, if at each end I make the borders, and there plant the Vines.—WILLIAM MILLER, *Gowran Castle Gardens, County Kilkenny.*

HARDY HERBACEOUS GARDEN PLANTS.

TRITOMA.

IN a recent number we find *Tritomas* noticed as being "the finest things we have in autumn," and it appears to us very remarkable that some of these beautiful plants have been introduced, or at least known, for more than a century, and are only now beginning to emerge from obscurity, and meet with general cultivation.

As garden plants the whole genus is extremely elegant, of easy culture, and their value is greatly enhanced by mostly blooming at that period when the yellow lustre of autumn is beginning to mingle with the bleak tints of threatening winter, Nature having admirably adapted them for resisting the storms peculiar to that season.

Although natives of the Cape they prove perfectly hardy in ordinary situations, preferring a dry, rich, sandy soil; and, for the safety of the scarcer sorts, they should have a mulching of leaves, or such-like materials, to protect them during winter. They are easily increased by offsets, which may be removed in autumn, potted, and kept in cold frames over winter, and replanted in the open ground in April.

We are acquainted with six species or varieties of these interesting plants, and shall first notice what we consider the finest in the group, viz., *Tritoma uvaria*. Leaves, as in all the other species, triangular, three to four feet long,

deep green, smooth on the edges; flower-stems, in well-grown specimens, about five feet high; flowers scarlet and orange. One of the most striking herbaceous plants we possess, and cannot be too highly recommended; in perfection during September and October.

Of more recent introduction, and scarcely inferior to the preceding, is *T. Burchellii*, often confounded with the last species, but very distinct. The leaves are shorter, more rigid, erect, lighter green, finely serrated on the edges; scape about four feet high; flowers orange, shading into scarlet at the base.

Amongst the novelties of the past summer we have had in flower, for the first time, *T. Rooperii*. This very handsome, and, as yet, rare species was found in Kaffraria by Capt. E. Rooper, who describes it as "growing in marshy places." The leaves are long, two inches broad at the base, recurved, tapering to a long point, serrated scape, with us thirty inches high; spike roundish ovate, terminating in a coma of crowded, membranous bracts; subtending, abortive flowers. Unlike the rest of its tribe it blooms in July. Colour, deep red, the lower blossoms slightly tinged with orange.

As a winter-flowering plant *T. glauca* is conspicuous. We have, however, always had some doubt about this being really distinct from the following species. The only difference we can perceive, apart from minute botanical distinctions, is in its somewhat stronger habit and harder constitution. The leaves are about two feet long, deep glaucous green, smooth; scape three feet high, producing pseudobuds at the bracts, which soon become a tuft of leaves; spike six inches in length; flowers red, tipped with orange. It sends up abundance of suckers from the roots, and is more readily increased than any of the foregoing species.

Closely allied to the last is *T. media*, an old inhabitant of our gardens, more generally known than any of the other sorts, and is still worthy of cultivation. It commences flowering late in autumn, and may be seen rearing its assuming head to the storm, while summer flowers sleep beneath the desolation of winter, continuing in bloom until late in spring, as if to welcome renovated Nature again bursting forth into loveliness.

The last and least in point of size, though not in interest, is *T. pumila*, a distinct and pretty little species seldom met with in collections. The flower-stem is about one foot high; spike one to two inches long; flowers pendulous, orange scarlet; in bloom during November.—JAMES RAE, *Edinburgh.*

FILBERT CULTURE.

(Continued from page 147.)

HAVING, at page 147, described the propagation and planting of the Filbert as a fruit-tree, I now come to the most important part, in which the culture of this district differs from that of others—the *Pruning*; for, perhaps, of all fruit-trees, not even excepting the hot-house Grape, I am not aware of any in which the knife is so freely, if not severely, used as in the Filbert. In fact, the cutting of a Filbert in Kent has been at all times a subject of wonder to those who have seen the same tree grown high enough in other counties to require a thirty or forty-round ladder to gather the few fruits it produced, whereas here the smallest boy that is able to work for sixpence a day can reach from the ground all the nuts a large plantation grows. So close is the pruning, that, notwithstanding the vigorous and healthy growths every year, the trees are all kept so low as seldom to present a bunch of nuts higher than five feet from the ground. This, it is needless to say, is not attained all at once. Like all other trained trees, the Filbert must be started right at first, otherwise it is difficult to make a good one of it; in fact, much of the after-success depends on the way the tree is started off; consequently, the job of Filbert pruning is one of those which every labourer on a farm is not able to do, and which is generally performed by those who have been accustomed to it for years.

PRUNING THE FILBERT THE FIRST YEAR.—We will suppose the tree planted in autumn, having been reared in the accustomed way, and undergone some little preparation while in the nursery, which, in fact, determines certain important points of its general appearance. The natural habit of the plant being to form a close, upright bush, the central shoots of every little tree are cut away, or rather, pulled out, but, in the young specimen, more often cut, leaving those which are disposed to spread out in a half-horizontal direction to do so, but cutting off the points of these in order to check all luxuriant growth. The number of such lateral shoots as are left may be from four to six the first year, and about one foot is all that is left on at the winter pruning, and this, too, selected from the healthiest *small* shoots, not the coarsest large ones; for, like the Peach and other fine fruits, it is not the strong, coarse shoots that produce fruit, but the medium, or, very often, the small ones; besides which, there is a tendency for strong shoots, when cut in, to produce a like growth the next year, and this continues the improperly gross habit of the tree, while a medium or small shoot is not so likely to do so. It is proper here to observe, that the length of stem need not be more than one foot, and is often something less, before the branches radiate out as proposed, the object being simply to have a clear collar when the growth of some thirty years or more has swelled the stem and principal limbs so as often to approach nearer the ground than they were at first. The tree, in fact, when pruned the first year, may present the resemblance of a Gooseberry-bush of the same age, although few people cut out the centre of their Gooseberry-trees so effectually as is done in the Filbert; but in other respects they are much alike, and the tree by this time will be somewhat like Fig. 1.

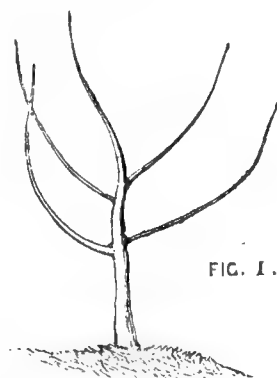


FIG. 1.

SECOND YEAR.—Presuming the ground to be good, and other things favourable, the growth the second year will be vigorous, and will require to be checked accordingly; and in so doing the ordinary stereotyped rules of garden-books, "which insist on all pruning being done with a sharp knife," are widely departed from; for, instead of a knife being used, the strongest shoots are shortened with a small saw, the teeth of which are anything but fine, the smaller shoots being cut with the knife. The object in using the saw is to have that rough, haggled cut, which is less likely to promote another rapid growth from that place. This system might, with advantage, be copied into some of our garden operations on gross Pear and other trees. Certain it is that the Kentish Filbert pruner has found it advantageous to adopt the plan, which is universal. Observe, it is only the gross shoots that are treated thus, and generally they are cut in to about one inch of their base, unless they arise from the centre of the tree, in which case they are pulled out altogether by a sharp and peculiar twitch. But they are not pulled out so much while the trees are young as they are afterwards, as the permanent branches will not have become firm enough to allow this to be done; in fact, the whole mystery of Filbert pruning and management depends

on checking the undue growth of useless wood, and encouraging the production of useful small wood, which alone furnishes the nut-bearing buds so much wanted; and a few of these shoots must be left at the winter pruning, so as to increase the size of the tree in the shape described; but few lateral shoots need be left, as the tree must not by any means be crowded. It is represented by Fig. 2.

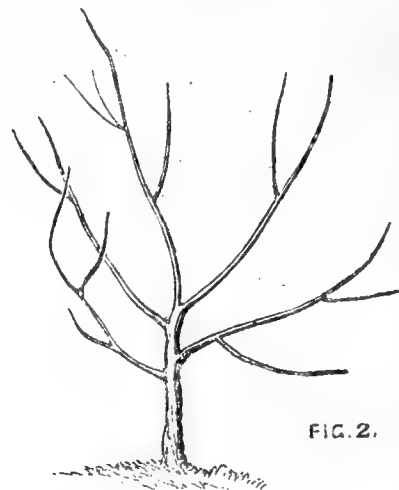


FIG. 2.

THIRD YEAR.—The growth of the tree the third year will have been vigorous, shoots four feet long, and as straight as an arrow, being quite common, and sometimes such shoots are six feet or more; but the judicious pruning of the last two years will probably have tended to produce a quantity of useful bearing shoots, from which those wanted for the use of the tree ought to be selected and left at the general pruning; and, as some fruit may reasonably be expected the ensuing year, it is proper here to say a few words on the botanical structure of the flower. Before doing so, however, it is as well to observe that the pruning ought to be done on the same principle as that of last year, only, as the tree increases laterally, a few more shoots may be allowed to occupy places nearer the outer edges of the main shoots; but still avoid crowding if possible, and aim at the whole forming, as it were, the framework of a basin or inverted umbrella, the centre being perfectly open, and the spreading to be such as to embrace the greatest space it can, without coming in contact with another tree of the same kind. The appearance the third year would somewhat resemble Fig. 3, thus—

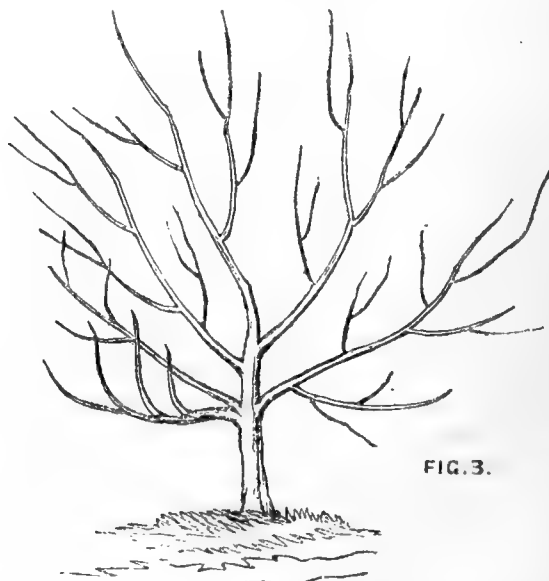


FIG. 3.

CHARACTER OF THE TREE AND ITS BLOSSOMING.—The Filbert differs from most other fruits in the male and female organs being on separate florets, though on the same plant. The male flowers, a sort of graceful yellowish-green catkin or drupe, show themselves long before the

female, which are of a rich crimson colour, and much smaller than the male flowers. The latter begin to show themselves in January, or even in December if the weather be mild; but the female buds rarely show any colouring until February, when they gradually open and expand into a sort of lengthened globular tuft of a beautiful deep rose or crimson colour, which afterwards becomes the bunch of nuts. The male blossoms, by the time the female are fully expanded, are much faded, and, in fact, many of them fallen; but they have performed their office. The weather during the time the female ones are out has much influence on the future crop; for though, as I have said, the female buds begin to open in February, they proceed slowly until the weather gets milder; still the Filbert, like the Plum, is an early-blooming tree. Now, the lesson to be learned from this is to prune early, so as not to rub off the buds; and also to get all digging and other work done in the Filbert ground by the middle of February at the latest, for it is impossible afterwards to work amongst this class of trees without rubbing off more or less of the blossoms.

AFTER-PRUNING OF THE TREE.—Under this head may be included the general pruning that full-grown trees receive, and this may be best described by referring to the tree, which usually presents a number of strong, straight rods in the centre, from three to six feet long, and tapering like a fishing-rod. These are all pulled out by a twitch, and they generally part from the main shoot at the bottom very well. These shoots are very useful to the gardener in many ways, and are furnished in great abundance in Filbert plantations, so that many of the fruit market-baskets (sieves) are made of them. Some of the smaller shoots are, however, retained, but are all shortened and spurred in, though differently from the ordinary wall-fruit system of spurring, very little of two-year-old wood being retained, and, in fact, very little young wood at all compared with anything else in the fruit-tree line, unless it be the hothouse-spurred Vine. The kind of shoot to leave can only be learned by practice. Small, but not soft, half-grown shoots are selected, with short joints, and these showing buds of a promising kind, which cannot well be described without the plant be examined; and the quantity of such that are left will seldom exceed more than two on a full-sized shoot, while all the gross leaders, if there be any such, are roughly sawn off within about one inch or so of their base; and the appearance of the tree is stunted in the extreme, the central part being often old woody stems of three or four inches in diameter, and these bearing scarcely more than a few small shoots of young wood, which, taken collectively, would not amount to more than one foot in length. This is a full-grown tree, which, it must be borne in mind, expands itself into a sort of basin-shaped form of ten feet or more in diameter, the main shoots, starting from a very short stem and thin lips, being only about five feet high; and so uniformly is this rule carried out, that very often in a whole garden they look as if all cut or clipped to a certain mould, the main limbs having more or less branchlets, so that the extreme tip may present one to about every eighteen inches or two feet of the circumference; and though these are not always at one and the same height or line, nor are they ever straight, still they are as near to that shape as possible, and, in the main, present a greater resemblance to each other than even Currants or Gooseberries do under similar circumstances, the gnarled character of the old wood tending to this; and it is surprising the quantity of fruit such stunted objects will bear, as well as the mass of healthy foliage they each year furnish.

REASONS FOR SUCH SEVERE PRUNING.—It may, perhaps, be asked, Do not such severe cuttings shorten the life-time of the tree? This I verily believe it does, although it rarely kills them; neither do they often become diseased;

but they become unfruitful at times. Still the advantages of the system are such as far to counterbalance the evils attending it. Fruit of a better description is obtained than by the unpruned mode of allowing the tree to arrive at a great size, and the whole tree is within reach of the ground. Another question will, perhaps, be asked: Do not such close-pruned trees produce forests of suckers? This we all know would probably be the case with most garden fruit-trees, as it is with standard Roses and such-like; but the shrewd Kentish orchard-manager has a way to prevent this, more useful and effectual than that generally adopted, which, though simple enough, I must leave to another week to describe, as its due performance exerts no small influence on the general welfare of the plant; besides which there are some other points to which it is necessary to call the attention of those unacquainted with the habit of the plant, though not of a kind to deter the enterprising amateur from attempting its culture, as, in situations where it does well, no fruit whatever pays so well. Upwards of thirty hundred-weight per acre has been produced on some favoured spots; and, when an orchard consists of mixed fruits, the Filbert is looked upon as the most likely to pay the landlord, and other fruits are generally cut down to make way for it. I might also add, that one of the reasons for the wholesale cutting away of the centre of the tree in pruning is to allow the sun full liberty to play on the north side of the tree, and all other points of its culture seem equally founded on reasons well calculated to promote a successful issue.

J. ROBSON.

THE POTATO, ITS CULTURE AND DISEASE IN THE PRESENT YEAR.

I FLATTERED myself many times during the month of July that we should once more steer clear of the disease among our Potato crops. I so thought because of the long-continued fine, dry, hot weather we had during the past summer, and I do still believe that very many of us might have saved our Potatoes from the disease, if we had had the good sense to have taken up the whole of our crops before the rainy weather arrived during the month of August. I cannot say on what day of the month the rain either commenced or discontinued, as I do not keep any account of the weather, although I am daily ruled by it, ever watching it, and performing my daily work accordingly.

Every kind and crop was well ripe with us and extremely fine before the rains came on in August; and what happened afterwards? Why, all the Potatoes that were left in the ground commenced a second growth, and became very much diseased.

I never have seen any diseased Potatoes taken up from the early-frame or other gentle-hotbed crops from first to last, though, it is true, I have heard of such being the case. We always begin with the frame, next with a gentle hotbed, for hoop and mat or other protection, and so on, from the warm border to the open quarter. Of course, it is natural enough that one should plant the earliest kind first; not that this would be of any consequence, for, if all were planted on the same day, both the latest and earliest, it would make no difference at the taking-up time; the earliest kind would be certain to be ready for the table first.

Feb. 18th, 1856, I planted about three perches with *Haigh's Seedling*, a kidney kind, which resembles the *Walnut-leaved Kidney*, but is much more productive, and nearly or equally as early. The plot was situated in a nice, open, and warm quarter, and the soil being very light and rich, no manure was used at the time of planting. The whole being neatly dug, the rows were all measured out about twenty inches apart, and marked at each end; then a line was stretched from north to south; and, having the sets ready in a basket, they were planted with a common dibble, and covered with the same implement.

In this way all our Potato planting is performed, by digging up the whole plot first, and then all the rows being

measured out to the proper width, the work is performed in very much less time by this than by any other method.

From this crop we commenced taking up about the first week in July; the tubers were pretty well ripened, so that by the skill of the kitchen-maid in dressing them they appeared very beautiful on the table. Several rows of this kind were consumed before the end of the month; not that I confined myself to this plot for the consumption of the house, for, on the 10th of July, I tried my *Looker's Oxonians*, which I found then to be full grown, and to dress beautifully; and on the 12th I tried *Rylott's Flour-ball*, and these being the same, I supplied the demand first from one plot and then from the other, until all were taken up.

The *Looker's Oxonian* we have grown for many years as one of our favourite early kinds. This is the name I had with it from an Oxford friend, but I have seen it since in the seed shops, sold by the name of the *Early Prolific*, which is a very good name for it, for it is a very productive, as well as a very stemmy kind, so that we always plant them wide apart in the row, and from row to row. A rich, open plot, not even shaded by a Currant-bush, about five perches in extent, was chosen for these. The plot was well dug, the rows measured out twenty-six inches apart, and in planting the sets were put in twelve to fourteen inches from each other. These were planted on the 1st of March, and were taken up on the 28th of July, as I wanted this plot of ground for Turnips. From that day to this I have not seen a single diseased Potato among this crop, and they have every one of them been through my hands since in the Potato-house, as I had occasion to move them to another part of the store.

Had we then set to and dug up the whole of our Potato crops I believe we should have escaped the disease, and had as fine a yield, both for size, productiveness, and quality, as we could wish. I so believe, because we had already tested every kind, and proved them to be all well ripe at that time.

My kind master was as much interested about the fear of disease and the particular fineness of his crops as I was; but still he thought if they remained in the ground a little longer they would get better still. My practical ideas ran in favour of taking them up.

After having secured the crop of *Looker's Oxonian*, and sown the plot again, the rains soon commenced, and, having a few rows of *Haighs's Kidney* left in the ground, symptoms of disease began to appear in their leaves. Directly I saw this I took the first opportunity to take them all up. They were about three bushels in bulk, and the tubers appeared to be sound; but, at the end of a fortnight, I observed two or three diseased ones amongst them. They were then all turned over and examined carefully. I found from a dozen and a half to two dozen bad ones among them, and I may have taken one or two out since.

After the rainy and muggy weather in August the disease made rapid progress in the leaves and stems; so, as soon as the weather became a little more settled and favourable, I determined upon taking up all the various plots that I had observed to go off first. I commenced with a beautiful quarter of *Forty-folds*, in a fine, open spot, not shaded by anything. These were planted, as before mentioned, twenty-six inches from row to row, and fourteen inches from set to set in the row, on the 20th of February, and taken up on the 25th or 26th of August. The plot contained about five perches. We found, at the time of taking up, about one-third of the tubers diseased. Those we thought good were conveyed to the Potato-house, and placed upon straw about a foot thick; but, in about a fortnight afterwards, I discovered lots more gone off. They were all again looked over one by one at a loss of rather more than another third, so that the total loss was rather more than half, and, which is generally found to be the case, the largest and finest tubers were the victims of disease.

Now, I attributed the cause, in a great measure, to the soil in this fine, open plot being so much more of a tenacious character, as it had been made ground; that is, a vast quantity of fresh soil had been carried in at different times upon this quarter, and, therefore, was less porous than the general soil of our garden.

Two small plots of the *Rylott's Flour-ball*, planted March 7th, were taken up August 26th or 27th. The two plots

were shaded by large Apple-trees, and contained about two perches each. In both of these cases two bushels in five bushels were diseased, owing, probably, to the shaded and gloomy situation they grew in. Of *York Regents* a small plot, about three or four perches, was planted on the 28th of March, in a dry, open spot, and taken up on the 27th of August, with a loss by disease of about one-third.

Of *Flukes*, having had about two gallons given us, and a prime sample, I thought them as handsome a Potato as I had ever seen, so I thought I must try how fine I could grow them. I selected a nice open spot for them, about a perch, in good condition, where I planted them, two feet apart every way from each other, on the 1st of March, and took them up August 27th, with a loss by disease of rather less than one-third. This variety proved to be a very strong grower, so much so, that the stems were quite erect in most cases to the last, and the tubers growing almost close to the stem, and as compact as the pips of a Pine-Apple, so that there was no fear of leaving any of them in the ground at taking-up time. I found them all most difficult to separate from the stalk—they held so strong.

The *Fluke* is a very handsome Potato, but not one that I should grow many of, although I may plant it again and again.

I am now come to our last quarter, which contained about ten perches. This was planted with a Potato called *Dalmahoy*, a beautiful Scotch kind, very similar to the *York Regent*, and probably all but the same. These were planted March 7th, twenty-six inches from row to row, and fourteen inches from set to set, and taken up on the 6th of September, with a loss by disease of about one-third. This plot was left until the last, because we considered it the least liable to take the disease, on account of its being the driest-bottomed plot of ground, and not being shaded by so much as a Gooseberry-bush.

We always plant whole, medium-sized sets, and insert them from six to seven inches deep in the ground. Nothing more is done but to carefully stir the earth between the rows as often as necessary, and as long as we can without either injury to the stems or the young surface fibre. We for very many years practised the plan of earthing up, or rather, basining them up, by drawing up a little earth along the two sides of the rows, which was thickening the earth over the tubers without injury to the stems; but this operation we have discontinued for the last two or three years. THE COTTAGE GARDENER, I think, told us that earthing up was not beneficial to the growth of the Potato, and this I now believe to be the case.—THOS. WEAVER, Gardener to the Warden of Winchester College.

PEARS WORKED ON QUINCE STOCKS.

BEING of the Erringtonian opinion as regards Pears worked on the Quince stock, and having twelve trees, or rather, had at one time—trees purchased of a celebrated nurseryman some ten years since—let me record in your pages their present plight. They were planted out into a good Pear and Quince soil, which I found, by numerous specimens of from thirty to forty years' standing, doing well in their vicinity.

Under these circumstances, therefore, I consider the twelve trees a pretty fair sample of what one may expect if purchasing in quantity, and that sample, I am sorry to say, will but too truly show that nurserymen are not over particular in sending out trees worked on Quince stocks before they have been thoroughly tested. There is not a doubt but many varieties agree upon the Quince. Indeed, there are here two of at least forty years of age, and two on a wall, trained horizontally, have a good crop of fruit this season, when their neighbours on each side have not had a fruit on them. The fate of the twelve Quince-worked Pear-trees is as follows:—

No. 1. Dead.

No. 2. Ten feet in height; branches ten feet in diameter; quantity of fruit last year, but not worth harvesting.

No. 3. Uncomfortable.

No. 4. Dead.

No. 5. Dying.

No. 6. Eight feet in height; diameter of branches, ten

feet; healthy; lots of fruit last year, but, like No. 2, not worth gathering.

No. 7. Eight feet in height; a one-sided affair; not to be recommended.

No. 8. Dead.

No. 9. Six feet in height; full of bloom this season at the top, and just as unhealthy as the advocates for tight lacing could wish.

No. 10. Like No. 7, one-sided and top-heavy.

No. 11. Dead.

No. 12. About eight feet in height; healthy, but one-sided; showing that if planted out as standards, if not kept low, they will require stakes to keep them up.

It will be seen by the above that one-third of the trees are dead, another third on their last legs, and the remaining third, though healthy, have never produced a fruit that any one acquainted with the taste of a good Pear would not have discarded from table, although such varieties as the *Chau-montelle*, *Louise Bonne of Jersey*, *Marie Louise*, &c., do well here.

Even after seeing Mr. Rivers' collection and others, I would prefer the Pear stock under judicious root pruning. The interesting exhibition of the three trees I saw in Regent Street on Tuesday last was, after all, got up for exhibition; and Pear stocks, to say the least, were hardly fairly represented.—D. FERGUSON, *Stowe, Buckingham*.

EARLY-BLOOMING POMPONES.

In a recent number of your valuable paper I see a correspondent asks for a list of early-blooming Pompones. I have raised some hundreds, and find the following to be the best for early out-of-door cultivation:—

Hendersonii, pale yellow.

Solfaterre, yellow.

La Lilliputia, reddish brown.*

Sacramento, yellow, tipped with red.*

Madame Roussilon, white and rose.

Autumnum, buff.

Argentum, white.*

Cedo Nulli, white, with brown points.

Scarlet Gem, scarlet.

Berrot, golden yellow.

Pluie d'Or, gold and canary.

Vesta, pure white.

Surprise, white, tipped with lilac.

St. Thomas, chestnut red.

Regalis, orange red.

Durnflet, rose and carmine.

Those marked thus * show a little centre when fully bloomed.

The above all bloom very early with me, and before any others; but they must not be stopped after the first week in August.—SAMUEL BROOME, *Inner Temple, London*.

POWER OF BEES TO GENERATE HEAT.

A CIRCUMSTANCE occurred in my apiary on the night of the 1st of December, which, as I have never seen anything of a like kind mentioned in THE COTTAGE GARDENER, I think may not be out of place to record in its pages.

With the generality of apiarists I know that the temperature of the bee is in ordinary circumstances some degrees higher than the medium in which it exists, probably 10° to 14°, and that, if they are in any way disturbed, they can raise it, even in the depth of winter, as high as 80° or 90°; but I was not aware, until the night in question, that intense cold is as effectual in arousing them as any disturbative we can employ.

I make a practice every night of visiting my bee-house (a glazed structure, by the way) before I retire to rest. At eleven o'clock on the above night I did so, and found the thermometer outside the bee-house standing at 13°, while within the house a gentle hum was heard proceeding from the hives, almost equalling the sound of a busy hive in spring. Through not having a thermometer in any of my hives or

boxes I cannot say what the heat in their interior would have reached; but if I may hazard an opinion, founded on a comparison between the sound now and the noise and accompanying heat in spring, it would have ranged somewhere between 50° and 60°. The glass cover and window of an empty super, placed over a stock having the communication cut off, were encrusted with frost, nothing of the kind appearing in the window of the stock. At noon, on the 2nd, the thermometer stood at 26°, the bees making no perceptible noise. Am I not warranted in inferring from these facts that the bees not only possess the power of preserving themselves from the otherwise fatal effects of intense cold, but also the sagacity or wisdom of exerting this power in its proper time and place? that in cold weather they will continue in their state of sleep until the temperature falls below a certain point? This point once reached they shake their torpor off, and, by increased activity of their respiratory organs, disseminate a genial warmth throughout their domicile. How does this affect the doctrine that frost causes the honey in the hives to become granulated or candied? For my own part I am convinced that, so soon as the temperature of the hive approaches to 32°, the bees will create such a warmth as will effectually exclude the freezing influences of frost.

I never found this candied honey in any of my hives but once, and I know quite well that frost had nothing to do with its being there.—D. G. M'LELLAN, *Rutherglen*.

[Why not bring your opinion to the test of experiment? A shilling thermometer in a hive, and another outside in the house, would show the difference.—ED. C. G.]

QUERIES AND ANSWERS.

COLLINSIA BICOLOR ALBA.

"I inclose a specimen of my variety, *Collinsia bicolor alba*, saved by me from the *bicolor*. The specimen sent is from seed from those that were in flower in May this same year, and described by you in your paper of May 27th, p. 157. A second time I showed a specimen along with a branch or plant of the *Bartsiafolia alba*. I am sorry you made a mistake at p. 289 of your July 22nd paper. You there say it is a very greatly improved variety of *Collinsia Bartsiafolia*. It has no connection with the former. The public generally has been under a delusion altogether, for many have considered the *C. bicolor alba* out. I write this hoping you may do a service to gardeners and seedsmen by making it public that the *bicolor alba* has not yet been supplied that I know of.

"Any one the least conversant with the *Collinsias* knows the difference between the seed of the *Bartsiafolia*, which is a very small seed, and the seed of the *bicolor* variety, which is four times the size of it, and flat.

"I send you a sample of my variety of the new white *Collinsia bicolor alba*, and one of the white *Bartsiafolia*. I think the white raised by me is not so large as its parent, the *bicolor*. However, it is very different from the white *Bartsiafolia*, which I have found will be far more precarious to get to stand a spring than the free-growing variety of *bicolor*.

"The *Bartsiafolia alba* is a pretty little white annual when in full bloom, and well worthy to be grown either for a bed or for an edging; but it will have no chance in a whole bed with the variety of the *bicolor alba* I have raised. It grows, in rich soil, eighteen inches, with a beautiful branching habit; the flowers snow white, and the foliage a deep pea green. Others may possess this variety, but it is not out yet to my knowledge. Those sent cannot be compared to a summer's growth, and the colour is not so pure now either, although I think it will be a valuable autumn annual, for it looks quite gay with me in the greenhouse in pots now. I am afraid it will be withered by the time it reaches you: from this date three or four days will pass, perhaps, before you see it.

"Being convinced the *bicolor alba*, when out and grown, will be a great acquisition to our hardy annuals, has caused me to give you these particulars regarding the two varieties.—WILLIAM MELVILLE, *Dalmeny Park Gardens*."

[While the cut flowers of this new *Collinsia* were on the

way from Edinburgh a self-registering thermometer indicated fourteen degrees of frost two nights running, namely, on the last of November and the first of this month; that is, the index stood as low as 18° on the scale; yet a beautiful bunch of shoots, full of snow-white flowers, as large as those of *Collinsia bicolor* itself, came through that cold as fresh as the moment they were cut at Dalmeny Park, a short distance to the west of Edinburgh. They were packed in moss, which was neither wet nor dry, and in a small deal box. We wish all young gardeners would study the art of packing fruit and flowers, an art which is a thousand times more useful than to grow a plant for a "specimen."

That this new annual will be as useful as the *Collinsia bicolor*, and as much sought after as any annual ever was, we have not the smallest doubt, after thus passing THE COTTAGE GARDENER ORDEAL.

Mr. Melville has it in bloom now, and will have it so the whole of the winter, and every gardener in the country with a greenhouse may have a dozen of pots of it in bloom this time next year if Mr. Melville would be so charitable as just to say what day or week in July or August he sowed the seeds.

It was a pity that *Bartsiaefolia* was mentioned at page 289 of our last volume, as the two are quite different. *Bartsiaefolia alba* was grown in the Experimental Garden last year; and last July Mr. Scott, of the Merriot Nurseries, near Crewkerne, Somerset, sent a bunch of cut flowers and a packet of seeds, for the Experimental, of this *Collinsia bicolor alba*.

I have never seen either of the contributors as far as I know, and if I did it would be all the same. I must hold the scales on the fair balance between them; but I must first thank them both for seeds enough of these new *Collinsias* to plant an edging two or three hundred yards in length, which seeds are just as safe in my hand as if in the bank of England. On reading Mr. Melville's letter, I wrote to Mr. Scott to ask for an explanation, being confident as to the identity of the two samples, and he answers thus:—"I am highly obliged to you for your letter respecting the new *Collinsia bicolor alba* I sent for your Experimental last summer. I had seen a white *Collinsia* quoted in the London trade-lists last spring. I sent for it in the usual way, and received such small seeds as I knew could not be that of *bicolor*. I wrote to say so to Messrs. Hurst, who sent me another packet, saying it was the very kind that was advertised by Mr. Waite. After that a foreign list was sent me, in which was noted *Collinsia bicolor alba*. This I ordered, and sowed it and the London sort at the same time. When they arrived at maturity I sent you the two sorts, with, I believe, a little seed of each. I now inclose a small packet of each again to make sure. You will be able to judge them better when you see the two growing together. I think them both a great acquisition, but you must be the arbitrator."—D. B.]

HARDY HERBACEOUS PLANTS AND CLIMBERS FOR A CONSERVATORY BORDER.

"I have a border, thirty-six feet by five, extending the length of a conservatory. I am desirous of making this a mixed border for six of each of the best known varieties of *Delphiniums*, *Campanulas*, *Lobelias*, *Mimulus*, *Pentstemons*, *Aquilegias*, and *Antirrhinums*. These are my special pets in border flowers, and I should fill up with single plants of new things recommended by you (1856), which will be within the reach of my purse in 1857. There are seven lights to the conservatory; between each light a framework of about eighteen inches broad. Up these I intend having climbers. The conservatory faces south, so my plants will be well protected. It is rather dry in summer; but I can always syringe the plants well from the water-but in the house. I shall be very much obliged if you can give me a list of the most effective of the above. The newest I am not anxious for; I would rather have those that experience can vouch for as good; also eight showy climbers. Roses do not answer very well. The quick growers grow rampant; the slow ones get the fly. Would you advise my procuring the above plants now, or in the spring? Last year I grew a *Mimulus* successfully by surrounding it under the soil with moss, which by a funnel I contrived to keep moist

without being wet. My neighbours certainly failed in theirs; but whether my plan had anything to do with my success remains to be proved. What do you think of the *Atragene* as a climber? I do not know it, but had it recommended; also *Solanum jasminoides*; but I am afraid this last is poisonous, and I have six little children always running about, so I do not like running a risk, though they generally confine their fingers to their own gardens. *Calystegia pubescens* is another climber I have heard admired.—KATE."

[We hardly know whether you wish us to give a list for your borders, but the following will look nice:—Six *Delphiniums*—*magnificum*, *formosum*, *Hendersonii*, *Barlowii*, *Menziesii*, *Chinensis*, or a variety of *grandiflorum*. Six *Lobelias*—*fulgens*, *fulgens* *Marryattæ*, *splendens*, *syphylitica*, *polypylla*, *colorata*; the first three will require a mound of ashes over them in winter. Six *Mimulus*: these just now are in a transition state. Apply to any dealer for his best six from *variegatus*, *rivularis*, *Youngianus*, &c.; or get a packet of seed, and you may have hundreds of good flowers in your border. Six *Antirrhinums*: the best that we know is *Hendersonii*. The vast variety, and pretty withal, seem to us to be too much on a level. Tell your dealer to send the best, but get *Hendersonii* among them. A small packet of seed, and, like the *Mimulus*, sown in a house in March and pricked out in May, will give many good plants. Six *Pentstemons*—*speciosum*, *Murrayanum*, *Richardsonii*, *Mackayanum*, *Gordonii*, *glandulosum*. Six *Aquilegias*—*formosum*, *glandulosum*, *Garnieriana*, *grandiflora*, &c.; but here you had better trust to the respectable florist, for the *Columbines* are just now undergoing great improvement. Six *Campanulas*—*persicifolia plena*, *persicifolia plena alba*, *grandis*, *azurea*, *glomerata*, *pyramidalis*, in a good place, and the small *Carpatica*, blue and white.

You will find that the *Mimulus*, when fairly started, will do best when treated something like a half-marsh plant.

Eight showy climbers for pilasters in front of outside of conservatory:—

The *Calystegia pubescens*, of which you inquire, is a double pink *Convolvulus*, that dies down to the ground every autumn. The children are not likely to be injured by *Solanum jasminoides*, as it seldom seeds, and would scarcely stand in severe winters. The *Solanum crispum* is more hardy, though not such a good climber, but it is more showy. The *Atragenes* are just a division of the *Clematis*, and all are interesting. *Alpina*, the *Austriaca* of the DICTIONARY, is as pretty as any. Supposing the front of the conservatory was above ten feet high, we would recommend the following, all summer flowering:—

Jasminum revolutum, *Ceanothus azureus*, *Bignonia capreolata* and officinale, *Lonicera flexuosa* and *flava*, *Solanum crispum*, *Periploca Græca*.

If the front is much lower, then the following:—

Jasminum revolutum; *Clematis carulea grandiflora* and *Sieboldii*; *Lonicera flexuosa*, *sempervirens*, and *Japonica*; *Atragene Austriaca*; *Ceanothus azureus*.

As to the other queries in your postscript there will be published a supplement to the first edition of THE COTTAGE GARDENERS' DICTIONARY. Your cook's "Finigric" is *Fœnugrek* (*Trigonella fœnumgræcum*), the seed of which was recommended to be given to hens even by the Roman writer Palladius. We do not know whether it is beneficial to poultry. We do not think there is so much nourishment in the white *Mangold Wurtzel* as in the red.]

GERANIUMS TURNING YELLOW AND VERBENAS TURNING BROWN.

"I have built a small greenhouse for keeping my plants in during the winter, and, although I have attended to them myself, I am not succeeding very well.

"In the first place, my *Geraniums*, after being cut down at the proper time, put out most vigorously, although old plants. After that they were potted, but now the leaves are turning yellow. After taking them off, my trees look quite bare. I smoke my plants every now and then, and syringe them.

"In the next place, in some of my young *Verbenas* the leaves turn dark brown, and they gradually die off. I have dusted them with sulphur, but that does not seem to stop it. If they go on in this way I shall lose all my plants.—W."

[We hardly know what is the matter with the Geraniums. If free from insects, why smoke them? If they have been covered with green fly before you smoked them the leaves would go as a matter of course; but most likely you will get fresh ones again if the plants are healthy as you say. After potting we have seen the leaves turn yellow from three causes—disrooting rather freely, and not shading from sun afterwards; allowing the soil to get too dry; and repotting when the old ball was in a dry state.]

We should have liked to have seen the leaves of the Verbenas. We have seen them turn off the colour you speak of from spores of fungi, and sulphur and lime were the remedies, and picking off the discoloured leaves. It is quite useless for you, or for any of our readers, to be impatient when a prompt reply is not given. We answer every one, and we give the best answer we can procure as soon as we obtain it.]

ROOM PLANT CULTURE.

"I have come to live in the country, without either greenhouse or hothouse, and intend trying various experiments to get plants to live through the winter, and to blossom in my drawing-room. Our kitchen is small, and, consequently, very hot, and so is a room over it (their aspect north-west), which I have turned into a "greenhouse;" that is to say, I have large stands of Geraniums, Fuchsias, Calceolarias, &c., before the window, and I purpose treating them exactly as you have told people to do those in a greenhouse—let in air when practicable; water two or three times a week; make a small fire at night when intensely cold. Everybody tells me that I cannot keep my Verbenas, as they are sure to "damp off." Will it be any use my putting them for a few hours every other day in saucers of water, so that the roots may suck in a small quantity, instead of watering them? If I put some Heliotropes, Lilies of the Valley, Pinks, &c., on the sill of the kitchen window (they will have a great deal of light there, but no air), will they be likely to be forced into blossoming early, to be removed into the drawing-room?—QUACK."

[The name of your plant is *Saxifraga sarmentosa*. With enough of heat in the room you speak of, you will succeed well if you pay attention. In cold weather your fire may make the atmosphere too dry; but you can easily damp the stage and the room, and even set the plants, as Calceolarias and Verbenas, on damp moss. Verbenas should also stand near the window. The mode of watering you propose is very good if you do not overdo it. Water by no number of times; but just as your plants want it, and then wait until your services are again required. Your Heliotropes will do well enough in the kitchen window for short times, when the other room would be too cold for them. Pinks will not do. Without air they would spindle and draw to nothing. Lily of the Valley and other bulbs, when the pots are full of roots, will be forced there nicely until showing flower, when they may be removed to the other room. We have no doubt you will succeed. If there is any point that troubles you let us know.]

TO CORRESPONDENTS.

VINERY (*Italicus*).—Your plan will answer very well. We presume you are to have no sashes, but strong sash-bars, to receive your glass, twenty inches by twelve inches. Your method of giving air at the sides will do, and so will that at the top; but if you could refer to a description of a pit-house at the nursery of the Messrs. Lee, of Hammersmith, you would see an admirable idea of giving top air by moving the whole coping in two divisions. We presume you intend your house to be ten or twelve feet wide; if so, we would plant Vines *inside*, on each side, about four feet apart, making a border a yard wide at least, on each side, inside the house, and another three or four feet, outside. That would be quite enough for the length of your glass roof, eight feet, and security should be taken against stagnant moisture by proper drainage. Spur-pruning will suit you best, provided you keep your roots near the surface, and do not allow them to go deep. You will obtain good Grapes and a larger surface of glass than by the lean-to; but we cannot say you will succeed any better.

HEATHS AND EPACRIS (*A Tyro*).—It is quite likely that your *Epacris coccinea* will yet show flower. The treatment of the genus has been given in full by Mr. Fish and others. It is not customary to pot these when cut down, but when the shoots have sprung two or three inches. You did right in thinning the shoots if so numerous. The length of six or nine inches would be considered short when full grown.

We are rather surprised they are so long, as you placed the plants in the open air when the shoots were an inch long. They would have been better in the cold pit, kept rather close until Midsummer, and then exposed to the direct sun more and more until the end of September. Good flowering plants are easiest procured by encouraging free growth, and then hardening or ripening that growth before the end of autumn. The shoots are then studded with flower-buds, but some do not show until the new year. The *Erica gracilis* is chiefly valuable for its free flowering. It would have been as well if you had thinned the flowers of your other Heath, and it should have been pruned very sparingly—taking away all the decayed flowers and a few bits of spray would have been sufficient under the circumstances. Such shortening of the stems can only be done in free-growing Heaths, and when these are in a vigorous state.

IVY LEAVES—VINE RODS DISBUDDED (*A Constant Reader*).—We have seen Ivy leaves like yours, from being preyed upon by caterpillars and grubs. Search the place for young ones in spring. We do not understand the case about the Vines. If every bud was removed from the axils of the leaves all along your young shoots, the Vines would require to be very fruitful to break all along those rods, and produce fruitful shoots. Many pick out a number of the buds near the points of the shoots, leaving the leaves, hoping to swell the buds at the base of the shoot. We should like to assist you, but fear we might err, as we do not know the full particulars; but, knowing them more fully, we think we could give right counsel.

THE POULTRY BOOK (*Anti-Dodge*).—We know nothing about the second edition of this work. We have sent your letter, but not your address, to Mr. Tegetmeier.

NAME OF INSECT (*F. H. S.*).—It is a species of *Coccus*, or true Scale insect. It will be injurious to any plant it infests. The little white masses are its eggs, and should be removed, or the stove will swarm with them. We cannot give you any information as to the Portland Cement.

BERRIES NOT POISONOUS (*A Subscriber*).—The berries of Holly, Bay Laurel, Laurestinus, Yew, and Snowberry are not poisonous.

PRESENT VOLUME (*A Young Tradesman*).—You require Nos. 419, 420, and 421 to complete your volume. You might erect a lean-to greenhouse for £40, of the size you mention, if you have a wall for the back. This would not include the boiler and pipes. Have the latter three inches in diameter.

HOYA CARNOSA (*N. Bannister*).—In our 327th number you will find the directions you require.

AUSTRALIAN OUTFIT (*A Subscriber*).—We cannot advise you. It would take up a whole number to state inquiries and to answer them.

BOTANICAL NOTES (*An Amateur*).—We will see what can be done.

GOOSEBERRY PRUNING (*A Grozet*).—Many gardeners partially prune their Gooseberry-bushes with the garden shears; but it is a rude method, only justified by want of time to prune more carefully, and by the bushes being capable of bearing much rough usage.

WALTONIAN CASES (*Kate*).—Mr. West, at Kingston, makes them for sale, and will give you the information you require. No danger need be apprehended from its use.

POMOLOGICAL SOCIETY'S TRANSACTIONS (*A. B.*).—They may be obtained of Mr. Ridgway, bookseller, Piccadilly, London.

AQUATIC PLANT (*E. Copland*).—We believe it is a diminutive specimen of *Ranunculus aquatilis*, or Water Crowfoot.

NAMES OF PLANTS (*A Subscriber*).—The tall white-flowered plant is *Polygonum cymosum*; the little wall-plant, *Arenaria serpyllifolia*; and the purple-flowered plant, *Impatiens glandulifera*. If the *Hortus siccus* with acari in it were ours, we should submit it for an hour to a heat of 212° over boiling water, each specimen separately.

INDEXES TO OUR VOLUMES (*A Subscriber*).—Index for Vol. VII. is in No. 183, price 4d. Indexes for Vols. VIII. and IX. are one penny each. Index for Vol. X., in Nos. 262 and 263. For Vol. XI., in Nos. 288 and 289; and for Vol. XII., in Nos. 314 and 315; all price 3d. each. Indexes for Vols. XIII., XIV., XV., and XVI., may be had separate, each price one penny.

VARIOUS (*An Anxious Inquirer*).—Use the pigeons' dung to make liquid-manure for your fruit-trees in pots. Mix the old and the new together; the latter is the strongest. You may either graft or bud your Cherries planted last year. Those planted this year must remain until 1858 before they are worked. Wild Pears are grown in woods. You may plant as late as February.

EUGENIA Ugni (*H. C. C.*).—This is the same as the *Myrtus Ugni*. A drawing and full particulars concerning it are in the *Botanical Magazine* for 1852, t. 4626.

VINES FOR A LARGE VINERY (*An Old Subscriber*).—We bow to your deprecation—"do not reply, there has much been written on the subject lately"—and, therefore, recommend you to procure good strong Vines, in pots, from eyes; if they are two years old, all the better, but fine, strong plants are now produced the first year by those who know how to grow them. The following are the sorts we would recommend. For the early house—*Royal Muscadine*, *Black Champion*, *Black Hamburgh*, *Chasselas Musquee*, and *Black Frontignan*. For the succession—*West's St. Peter's*, *Muscat of Alexandria*, *White Tokay*, *Black Damascus*.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

CREWE. January 29th and 30th, 1857. *Secs.* S. Sheppard and D. Margelts, Esqs. Entries close January 15th.

CRYSTAL PALACE. January 10th, 12th, 13th, and 14th. Grand Exhibition of Poultry, Pigeons, and Rabbits. Secretary to the Poultry Exhibition, William Houghton, Esq., Crystal Palace. Entries close December 13th.

ESSEX. At Colchester, December 31st, 1856, and 1st, 2nd, and 3rd of January, 1857. *Secs.*, G. E. Attwood and W. A. Warwick. Entries close December 17th.

KENDAL. At Kendal, February 6th and 7th, 1857. *Sec.* Mr. T. Atkinson.

NOTTINGHAM CENTRAL POULTRY ASSOCIATION. January 13, 14, and 15. *Hon. Sec.* Frank Bottom. *Secretary to the Canary Department,* Jno. Hetherington, jun., Sneinton.

PRESTON AND NORTH LANCASHIRE. January 21st and 22nd, 1857. *Sec.*, Ralph Leigh, Esq., 125, Church Street, Preston. Entries close December 13th.

SOUTH EAST HANTS. At Fareham, January 26th and 27th, 1857. *Sec.* Mr. James James. Entries close January 14th.

N.B.—*Secretaries will oblige us by sending early copies of their lists.*

MANAGEMENT OF BIRDS FOR EXHIBITION.

FOR the next two months we shall live among great events. Colchester, Crystal Palace, Nottingham, Preston, Liverpool, will all contribute to fill our columns, and to keep up the excitement of our favourite pursuit. We shall have "scant leisure" for the *a, b, c* routine of our duties. The owners and breeders of good birds have a harvest before them, and, when the meetings we have enumerated above have taken place, the time will be at hand for preparing for future triumphs.

Birds at this time of year will bear exhibiting many times if they are carefully managed. Summer and autumn Shows come at a time when birds are naturally weak. The breeding season is then just over, and the old, faded plumage is to be got rid of, to be replaced by strong and hearty feathers. They are required to afford warmth to the body, and to resist the wet, snow, and sleet of winter. Nature has made the effort, and the fowl is strengthened for the time of trial. A bird is never in better or higher condition than after a healthy moult. Where fowls are well fed there is no strain on the system, and they can support anything in reason. Now, it may be that some wish to show at every Show, but doubt whether they can do so without incurring the risk of injury to their birds. We think, with moderate painstaking, it may be done, and we will put down a course we have known to be successfully adopted.

The first requisite is to select healthy fowls for the task allotted to them, and to start them an hour after a good meal, which should be of soft food. Nothing is better than stale bread, and if the weather be very cold add some ale to the liquid in which it is steeped. A fowl in perfect health will resist any weather if fortified by a good meal of stale bread soaked in hot, strong gravy; lacking the last ingredient give some ale.

There should be plenty of dry, soft straw in the basket, which should be circular, and sufficiently high to allow the cock to stand upright and stretch himself. The top should be covered with canvass. Nothing will justify any deviation from the circular form. No quantity of room or height will justify a square. It has four corners, and a timid bird will resort to one of them and hide her head in it. This will often suggest to the cock the idea of beating her; and amateurs know too well such a bird will stand to be pecked till her head is eaten into. This is not the only disadvantage—the corners break the feathers. Now, in a round basket, let the bird move as it will, the feathers follow the form of the basket, and not one is broken; but if there are corners there is breaking.

When the birds return let their pen be ready, and give immediately a table-spoonful of castor-oil. This will get rid of any sawdust or any such matter picked up in the bottom of the pen. After the oil has been taken two hours give some soft food, and after the oil has operated freely give good food frequently, but a little at a time. They should not, on their return, roost in a cold place, and they should have access to dust. We have known fowls thus treated exhibited frequently during two months without any perceptible difference in their condition.

THE BIRMINGHAM POULTRY SHOW.

(From another Reporter.)

THE great event has come off. Some have taken their Silver Cups, some their Silver Medals, some their commendations, others have sold their birds at good prices, and all are, or should be, content.

As there is no Exhibition on so large a scale as this, so is there no Exhibition where the amateur may learn so much; and no reflecting person can leave Bingley Hall without believing what we have so often said, that a commendation at Birmingham may be more thought of than a prize at many other Shows.

It would be affectation if we were to write a report of this great Show without noticing the rumours that have circulated in the poultry world during the past year. It was said there would never be another. Then it was reported it would be moved to another town; then that there would be only one more—that which we now describe. All these remarks were untrue; but there was some foundation, inasmuch as the late Shows have not been profitable. Those, however, who imagine that the Show at Birmingham is like others, that it involves merely hiring a place wherein to hold it, paying the prizes, and the incidental expenses attending it, are mistaken. The value of Bingley Hall itself, situate in the centre of Birmingham, is very great. The land was purchased by shares, and the building erected, and when it is not let during the year, then one Exhibition during one week has to meet every expense of the twelve months. Such has been the case for the last two or three years. Some of its quondam friends have been anxious to be clear of the whirlpool formed by the sinking vessel, lest they should be sucked down ever so little with the wreck. They have tried to make themselves safe. Others of a nobler type have stuck to the good ship, though battered somewhat. They nailed their colours to the mast, and vowed—

"Sooner than strike they'd all expire
On board of the *Arethusa*."

This is only a figure of speech, like those who used to threaten to "die on the floor of the House of Commons." There was no occasion for them to die, nor even to reverse the Union Jack. The gun of distress was fired, and help flowed in from every side. Perhaps it is that all men are too busy or too idle to attend to that which does not immediately concern themselves; or perhaps it is that all men are incredulous, or affect incredulity, when belief would entail anything like trouble. It may be they solace themselves by laying the unction to their souls, that it is enough for them to mind their own business. They would copy a great man.

"Sir," said the servant, rushing into Corneille's study, "the house is on fire."

"Tell your mistress," said the great man, "I never interfere with household affairs."

So, perhaps, some exhibitors, provided the prize money is paid, care nothing for Birmingham.

We write for all, and, therefore, we have unmingled pleasure in telling them there is no probability of the Show being given up; but, at the same time, it is the duty of all who share annually the treat it affords to strengthen the hands of those who *for them*, and without any possibility of a pecuniary return, incur all the risk. There is, however, one class to whom we are bound to speak differently, and we allude to the people of Birmingham, the tradespeople, and hotel and tavern-keepers especially. They reap a rich harvest; they have a large trade during the week. The shop-keepers cannot see the Show, because it is the busiest week in the year. The hotels turn away scores every night; but they all hang back when they are asked to subscribe liberally. It may be well worth their consideration whether it is not better for them to be liberal to a Society which does so much for them. We have now done with this part of our report, and we repeat, there is no fear of Bingley Hall closing its doors to cattle, pigs, and poultry in the year of grace 1857.

Poultry appeared to the Committee to have one of the properties of Indian-rubber. Its elasticity was so great that bounds must be fixed. When, therefore, the Committee, four years since, found that the entries had reached the number of

2200, it became necessary to devise some plan which should lessen the entries without interfering with the excellence of the Show. It was then decided that no member should enter more than four pens. Seeing, however, that it has passed into a proverb, that it is easy to drive a coach and four through an Act of Parliament, it will not be thought astonishing that this arrangement was evaded. It was then made a rule that each pen should be paid for, and this brought the entries within moderate compass—1210 pens, independently of Pigeons.

The wisdom of this arrangement was manifest. All the pens contained good birds *only*. Now, indifferent birds, when sent, merely increase the number of entries, without in any way adding to the merit of the Show; yet they greatly add to the labour of receiving and sending off, as the worst pen must go through the same routine as the best.

We will now proceed to the description of the different classes, merely mentioning such pens as claim separate notice, and referring to the prize-list, published last week, for the list of successful. Let us, however, repeat, this was the *best collection of poultry ever seen in the world*, and the honours and successes must be meted accordingly.

The first two classes were for *Golden-pencilled Hamburgs*, and we can with pleasure report an improvement in both as compared with last year. The Judges declared them "very good," and Messrs. Worrall and J. Lowe, both good names, contested "the Cup;" the latter gentleman gained it. Mr. Worrall again took the first prize for *Golden-spangled Hamburgs*; but the Cup was taken by Mr. Kershaw. These gentlemen were hard run by Lord Berwick. The *Silver-pencilled* have not improved since last year, nor do we think, as a whole, they were as good as we have seen of late. The old "king of the castle" in this breed vindicated his claim to the title, *i.e.*, Mr. Archer took a first prize, as did the Rev. T. L. Fellowes. These gentlemen are identified with this class. The *Silver-spangles* are not so good as the *Golden*.

All the *Polands* improve, more especially the *Silver-spangled*. There were numerous birds in these classes of surprising beauty. The third-class birds of 1856 would have carried off the Cup of 1853 with ease. Here it remained in Birmingham with a deservedly popular exhibitor, Mr. G. C. Adkins, of Edgbaston. Few can boast of as much success as Mr. Greenall, who, we believe, was successful with every pen he sent.

Then came such a class as was never before seen, *viz.*, the *Spanish*. We are not inexperienced in these matters, and we endeavour to view them coolly; but we were not prepared for such an Exhibition. Even in good Shows we have heard from Judges that it was difficult to find a really meritorious fourth prize pen; but here many of the highly commended were birds of uncommon merit. Our readers may imagine, then, the merits of the prize pens belonging to Messrs. Davies and Rake. Comfort may be taken by the unsuccessful from the note appended to each class by the Judges. There is a great lesson to be learned from them. Every point that was required in a first-class pen a few years since is now common to the birds exhibited.

The next claimants for notice were 126 pens of *Dorkings*. The Judges said they could not speak too highly of this class, nor can we. Messrs. Donne and Wright were the heads of the two classes; but the former took the Silver Cup. Mr. Wright's birds were not shown in their usual good condition. There appears to be a mistake among some of our exhibitors in feeding these birds, as many of them were shown in such a state of fatness as to preclude all hope of success at a Show, and to be injurious to the birds themselves. Injudicious feeding has also the effect of interfering with moulting. This was very visible in a prize pen belonging to the Hon. W. Vernon, which were in deep moult, or from their size they would be dangerous antagonists. We cannot help thinking meat is largely used by many, yet nothing is more detrimental to the fowls.

We were pleased with the *Cochin-Chinas*, as we thought them improving, and we were also glad to see that good birds found a ready sale at from £2 to £3 10s. each. Every one was pleased that Mr. Punchard, who was the first who showed them at Birmingham, took the Cup this year. The Rev. G. Gilbert took two prizes with birds bred from his brother's celebrated old stock. The *Grouse* birds claimed

one pre-eminence—they had two Silver Cups, and the competition was animated for them. The Rev. Mr. Hodson and Mr. Bridges won them. The *Whites* were good, though not so good as we have seen. The *Blacks* were, as usual, a poor lot. We think this class might be profitably expunged.

There was little competition for the adult *Brahma* prize; but there were excellent chickens. Mr. Botham was successful in both classes.

The single cock classes were among the most interesting, and did not appear to weaken the pens entered for general competition.

We were glad to see a good entry of *Malays*, and good birds among them. The prizes went, of course, to Messrs. Leighton and Manfield.

The *Game* classes were never so strong in really first-class birds, nor were the prizes ever so scattered about. Many of those who have hitherto appeared, in some form or other, in every class are this year absent from the prize-list; but it will be seen that it has been a characteristic of this Show, that the prizes have been more scattered than they ever were before.

The *Bantams* were excellent, and the Cups went to the Hon. Miss Russell for *Golden*, and Mr. Forrest for *Duck-wing Game*.

Let the weights of the prize *Geese* speak. Three birds in the first pen, 67 lbs.; in the second, 64 lbs.; in the third, 59 lbs.

The prize *Aylesbury Ducks* weighed 30 lbs., 29 lbs., and 28 lbs. The *Rouens*, 24 lbs., 23 lbs., and 21 lbs.

Three *Turkeys* weighed 55 lbs., 53 lbs., and 47 lbs.

CLASS 1.—WATTLED PIGEONS.

SIX SUB-VARIETIES.

THE sub-varieties of the Wattled or Watted Pigeons are numerous, and may be looked upon as crosses from some of the foregoing established varieties.

THE HORSEMAN, as it is known to the London fanciers and dealers, is only an inferior Carrier. Often it has more wattle than that noble bird, but it is less elegant in shape, the beak being frequently rather bent, the neck more arched, and the pinions much shorter, in this case showing more resemblance to the Scandaroon. The *Pouting Horseman* is a cross between the Horseman or Dragoon and a Pouter. These are fine large Pigeons, very merry, and productive, and, according as they have more Horseman blood, so they have more wattle; or, if they are oftener bred over to the Pouter, so they have larger crops. The Germans breed a similar variety, which they call Ritter Taube, or Knight Pigeons; and the French, also, have a like cross, which they designate Pigeon Cavalier.

Our DRAGOON Pigeons, so commonly used in this country for flying matches, are also considered to have originated in a cross from the Carrier with the common Tumbler or the Rock, and, according as they are oftener bred over to the Carrier, they become stouter and more wattled. They are rather smaller and more compact than the Carrier, being less in all their properties, though often having much wattle, particularly if aged. They have long been an established breed in this country, are very productive, and excellent nurses. Their chief colour is blue, though there are also blacks, chequered, duns, silvers, whites, and pids. The whites have generally the blemish of dark eyes, and reds and yellows are only esteemed for their rarity. When they are bred with long, straight, lean heads, they are called *Shear Dragoons*, and much esteemed for flying. If bred over to the Tumbler till they lose all wattle, they are then called *Skinnums*, and are of no value except as sharp fliers.

Probably several of the so-called Runts, such as the *Roman*, may belong to the class of Wattled Pigeons. Aldrovandus calls some of this class *Columba vulgo Cretensis dicta*.

The Runts, properly speaking, are not Wattled Pigeons; but the large Pigeons, whether they belong to the class of large, unwattled Pigeons, *Columba domestica gigantea*, or the large-wattled varieties included in this class, *Columba tuberculosa*, are too little known in this country for me to enumerate them all, or admit of my classifying them satisfactorily.—B. P. BRENT.

THE POINTS IN FANCY RABBITS.

I SHOULD like to say a little about Rabbits, as I never see anything concerning them in your paper. In the first place, why do so many Shows not give prizes for them? The fancy would increase very extensively if there were such prizes. Rabbits are the cheapest to keep of any fancy animal, and they are the most prolific, and, if good, can be sold for high prices, as much as £20 having been given for one doe in Yorkshire.

It is evident there are *very* few who know how to judge a Rabbit, the prizes being given for *size*, the very last point to be considered.

The first point to look at is length of ear; width of ear is second; colour third—blue and white first, black and white second, and tortoiseshell third, being the three fashionable colours; fourth, way of lop; fifth, size of the eye; sixth, carriage; and, seventh, size. If all judges would keep to one rule for judging we might then be able to form a correct idea of what a Rabbit should be for showing. It is very disheartening to have twenty-inch-eared Rabbits beaten by fourteen-inch-eared ones, because the twenty-inch ones are young, and have not size.

If there be any encouragement given I shall write again on the general management, &c. We all know that a fancy article costs no more for keeping than a common one, and yet the young can be sold for more. Common ones are all very well for Yorkshire farmers, whose cry always is, "Is it a big un? Ar want summat chearp."—P. B.

[We shall be very glad to receive practice-founded communications on the subject.—ED. C. G.]

STATISTICS OF THE BIRMINGHAM POULTRY EXHIBITION.

WE now present our readers with a few statistics respecting the late Birmingham Exhibition of Poultry, which cannot fail to be most interesting, and are derived from an authority on which we can place the most implicit reliance. For poultry sold through the medium of the "salesman's office" the sum of £999 0s. 6d. was received; and when the fact is taken into due consideration that, by the adoption of a "single cock class," no *compulsory* purchase of hens also is enforced, this amount will appear in the aggregate a most extraordinary one, and carries with it the most convincing proof that the public taste for good poultry has not decreased in the slightest degree.

In the above amount are included thirty guineas each pen for the prize pens of both Spanish and Dorkings. A Dorking cock only simply "commended"—fifteen guineas; and several others of the same variety at ten pounds each. Various pens of Turkeys, Geese, and Ducks were likewise claimed at the last-named amount.

As to the financial returns the sum total received at the doors, in the shape of personal admission, was £1,259 13s. 0d. This was altogether independent of several thousands of children from the public schools and various charitable institutions, such as the Deaf and Dumb, Blue Coat Schools, and lastly, though not least, the latterly-instituted "Ragged Schools."

To all such free admission was most willingly given, and true it is that their gratitude and evident pleasure caused no less amount of heartfelt satisfaction to the Council of the Show than to themselves. To see these little youngsters, *formerly* uncared for, unwashed, and obtaining, as it were, a self-taught and truly criminal education by running the streets, now decently attired and properly conducted, traversing the extensive Exhibition, was a sight every one must admit was worthy of the universal congratulation it received.

A truly laughable little episode took place among this motley group. A Turnip-cutting machine was put into action for their special inspection, and for a length of time the excitement manifested among the children to obtain at least one of the much-coveted slices of this common root could not by any possibility have been exceeded had the edible been a veritable Pine-Apple in lieu of a Turnip. How truly little personal effort it costs to make the poor happy by *wholesale*! But to return from this little digression to strictly monetary matters.

The numbers admitted were as follows:—

On the Tuesday, by subscribers' tickets ..	3,601
" " by paid entrance	601
" Wednesday, by subscribers' tickets ..	740
" " by paid entrance	6,097
" Thursday, by subscribers' tickets ..	904
" " by paid entrance	11,897
" Friday, by subscribers' tickets	704
" " by paid entrance	4,031
Working classes admitted on Wednesday and Friday	13,745

Total attendance.... 42,320

This, as before said, is *entirely exclusive* of all schools. How singularly great must, of necessity, be the benefit of so great an influx of visitors to the licensed victuallers and traders of Birmingham generally! Surely, then, it must be "the interest" of all such to promote, by all possible means, the extreme outworkings of this most invaluable institution.

Before drawing to a conclusion it may be well to place before all our readers a summary of the *relative* position of the years 1855 and 1856 as to financial receipts:—

	1855.			1856.		
	£	s.	d.	£	s.	d.
Tuesday	170	10	0	150	5	0
Wednesday	339	11	0	304	17	0
Thursday	660	8	0	594	17	0
Friday	209	13	0	209	14	0
Total....	£1,380	2	0	£1,259	13	0

On the Friday evening public announcement, by large printed placards, was made, that "the poultry department would close at eight o'clock, to give the opportunity to send away the birds from a distance by the same night's trains." To please the public this was delayed until after nine, and still we are most happy to report the fact that the managing Committee carried out efficiently their original intention as to the railway transit. The most unqualified praise is due to them for so doing.

We must still mention one circumstance. It is quite evident at Birmingham that now "the right men are to be found in the right places."

OUR LETTER BOX.

ANERLEY POULTRY PRIZES.—"Would you have the goodness to inform me who is responsible for the payment of the prize due to me from the Anerley Poultry Show, that I may put the matter into my lawyer's hands. It is not only due to myself, but also to the public, that such defaulters should be exposed.—A CONSTANT SUBSCRIBER."

[This gentleman sends us his card, and we have similar letters from Mr. W. Joshua, Mr. J. Jones, and Mr. Cox. It is quite impossible for us to know who are responsible; but we know that Mr. Calvert and Mr. Ridout were very active in all that concerned the Show. If one of them were sued, and Mr. Wells, the Secretary, and Mr. Tegetmeier, put into the box as witnesses, we have little doubt a verdict could be recovered for the prizes.]

MARKS ON CHINA COCK (A Subscriber).—If he is buff-coloured, the dark metallic green bars on his wings are a great blemish.

PRICE'S GLYCERIN SOAP.—Nearly a century since the Swedish chemist Scheele discovered that when soda or any other alkali combines with an oil, and forms a soap, a sugary liquor remains, which he named *the sweet principle of oils*. This, in our modern chemical nomenclature, is now entitled *Glycerin*, from the Greek word *glykys*, sweet. Until very recently, this sweet liquid, obtained in hogsheads from the manufacturers of Stearine (the solid fatty matter used in candle-making), was employed only in adulterating moist sugar. It is now, however, recommended by medical men as a beneficial application in many diseases of the skin. With this knowledge, Messrs. Price have come before the public with their *Glycerin Soap*. How they combine the Glycerin with the soda and fatty matter we neither profess to know, nor do we ask them to explain; but we can testify from use that it is the most effective and most pleasant soap ever manufactured.

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WEEKLY CALENDAR.

D M	D W	DECEMBER 23—29, 1856.	WEATHER NEAR LONDON IN 1855.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
23	TU	The December Moth.	29.576—29.463	50—37	S.W.	07	7 a. 8	52 a. 3	4 17	26	0 27	358
24	W	The yellow-line Quaker.	29.663—29.627	49—33	S.W.	30	8	52	5 33	27	bef. 3	359
25	TH	CHRISTMAS DAY.	29.626—29.386	50—35	S.W.	19	8	53	6 48	28	0 33	360
26	F	ST. STEPHEN.	29.253—29.187	51—45	S.W.	26	8	54	7 57	29	1 3	361
27	S	ST. JOHN EVAN. [NOCENTS.	29.601—29.487	53—37	S.W.	01	8	55	sets.	☾	1 33	362
28	SUN	1 SUN. AFTER CHRIST. [IN-	29.743—29.616	58—39	S.	00	9	55	4 a 38	1	2 2	363
29	M	The incomplete Moth.	29.963—29.909	51—33	S.W.	01	9	56	6 0	2	2 32	364

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 42.5°, and 31.0°, respectively. The greatest heat, 58°, occurred on the 25th, in 1843; and the lowest cold, 8°, on the 28th, in 1854. During the period 122 days were fine, and on 74 rain fell.

POLYPO'DIUM DRYOPTERIS.



THIS Fern has uniformly borne the specific name of *dryopteris*, from being sometimes found among the moss about the root of Oak-trees, *dry*s being the Greek for an Oak, and *pteris* for a Fern. It has been included, however, in various genera by different botanists, being described by them as a *Gymnocarpium*, *Lastræa*, *Phegopteris*, and *Polystichum*. In English it is known as the *Three-branched Polypody*.

Its root is black, widely creeping, thread-like, wavy, and slightly hairy, with numerous tufts of rootlets. Fronds from five to twelve inches high, with nearly a five-sided outline when laid flat; but this form is not

apparent in their growing posture, owing to their very flaccid growth. Stem slender, brittle, pale green, very smooth, with the exception of a few scales at the bottom; dividing into three branches at the top, each branch about one-third the length of the stem, but the middle branch is rather the longest. The branches spread loosely and drooping, so as to be arched above. The branches really are large, pale, bright green leaflets, smooth, fine-textured, and cut into deep, oblong, blunt segments, wavy or toothed at their edge, and rather rolled back, and smooth, except having a slight downiness on the mid-vein. Instead of segments there are a few stalkless leaflets near the base of each branch. Each branch is triangular in its general outline. Mid-vein wavy, with alternate side veins, which fork, and bear a mass of fructification on the inner branch of each fork midway between the edge and the mid-vein of the segment of the leaflet. The masses are pale, convex, and permanently distinct, turning brown when ripe, and are without hairs, scales, or other covering.

It is found on shaded mountain-sides. In *England*, above Langley Ford, near the Cheviot Mountains; among rocks at the fall of Lodore, Derwent Water, in Cumberland; in Barrowfield-wood, near Kendal; near Durham; in Wedwood Forest, near Yoxhall Lodge, Staffordshire; near the upper part of the Tees; Egerton Moor, and Dean Church Clough, near Bolton; at Hill Cliff and Warrington, Cheshire; Boghart Hole Clough and Prestwich Clough, Lancashire; rocks at Belle Hag, Sheffield; Richmond, and about North Bierley, in Yorkshire; Cornbury Quarry, in Oxfordshire; at Froddesley Hill, and north side of Titterstone Clee Hill, in Shropshire; in woods north-east of the road up Frocester Hill, in Gloucestershire; and Leigh Woods, near Bristol.

In *Wales*, near Tintern Abbey; at Craig Breidden, Montgomeryshire; Rhaiadr-y-Wenol-Twll-Du, Caernarvonshire; near Llangollen on a slate rock; frequent in North Wales.

In *Scotland*, on the banks of the White Adder, between the Retreat and Elm Cottage, Berwickshire; at Langholm and Broomholm, in Eskdale; at Moray, in Ross-shire; Hawthorn Dean, near Edinburgh; about Dunkeld, in Stormont; common in Aberdeenshire, Forfarshire, and Perthshire.

In *Ireland*, at Connamara, Killarney, Mourne Mountains, Mam Turk, Tullamore Park, Turk Mountain, and other mountain districts.

This is the *Filix ramosa minor*, or Smaller-branched Fern, of Bauhin's *Historia Plantarum*, where it is well represented by the woodcut. It is certainly not the *Dryopteris Tragi* of Clusius, Gerarde, and Parkinson.

It was not known to Ray as a British plant when he published, in 1670, his *Catalogus Plantarum Angliæ*; but he had discovered it near Tintern Abbey before he published the first volume of his *Historia Plantarum*, in 1685, and this is the first certain notice of its being a member of the British Flora.

The *Polypodium dryopteris* is well worthy of cultivation, and, from its distinctness and comparatively compact habit, will be found to be very useful for rock-work, or any retired spot where moisture and shade can be commanded. It has, like the last-named species, a creeping main root, and will, like it, also require a shallow compost, composed of two-thirds fibry peat, with one-third leaf-mould, and a free admixture of sand and a little finely-broken sandstone. This compost will grow it either in the rockery or in a pot. In either case a good drainage must be secured; for, although the growing plant delights in an abundant supply of water, yet it is most averse to water remaining about its roots. Therefore this must be attended to, and, after the usual articles are placed (such as crocks, broken bricks, or porous stones) for the drainage, a layer of moss, or the roughest parts of the peat, should be placed over the crocks or stone. This will prevent the fine compost from filling the vacancies among the drainage upon the moss or rough peat. A depth of about three inches of the prepared compost will be quite sufficient. Upon this the plants are to be placed rather firmly, the main root of the plants to be just, and only just, below the surface. After this is done, providing the weather is anything but wet, a moderate watering should follow to settle the whole, after which the plants will require to be kept moist until the new fronds begin to unfold, when, as they increase in size, a free supply of water will be necessary over the whole plant, so that a shady, moist atmosphere may be kept about it as steadily as possible.

The same directions as regards drainage and planting must be observed for pot culture, giving a continual supply of water during the growing season, and keeping the pots in the shade.

This *Polypodium* may be readily increased by division. As winter approaches the water should be gradually withheld, and let the plants have a drier soil to stand in through that season. The plants in pots should have a slight protection during the winter. They thrive remarkably well in a greenhouse, and would do well for a case of hardy Ferns.

KEELE HALL, STAFFORDSHIRE.

It may be remembered that in the number of THE COTTAGE GARDENER for November 18th, at page 106, I recently offered an off-hand report of these interesting grounds. Not having much time to spare, and, indeed, not desiring to be prolix in such remarks, I did not

stay to measure the extent of some of the notorieties contained therein. Of this Mr. Hill, in the most civil way, has reminded me in a letter now before me; and I cannot but feel that I owe it as a duty, both to the report and to those readers whom it may interest, to render a few little matters more accurate. I may here first observe that my opinion of the Grapes, as expressed at the above page, although they might, at the time, to some appear to be too sanguine, were amply confirmed in a few weeks afterwards by the dignified position they attained at the Regent's Street Meeting of the Horticultural Society, November 25th. My good old friend, Donald Beaton, whom all the gardening world has heard of, observes, that the finest Muscats (!) and Black Hamburgs ever seen in this room were exhibited on this occasion by Mr. Hill; and I believe the great monarch of the metropolitan press also dealt out equally laudatory terms. But now to the report in question. Not having measured the approach, I overrated it; and as to the splendid Holly hedges, I, on the other side, underrated them. But the fact is, I was somewhat taken by surprise; I had not expected some of the good things I met with there, and was by no means determined on a report until I found myself knee deep in matters of some importance.

Now, as to the approach, Mr. Hill informs me that it is 640 yards from the high road to the stables; but then the road is no real terminus in the landscape, there being 300 yards more on the other side of the road, thus making altogether 940 yards. If some good object were placed at the end of these 300 yards, the part beyond the main road would at once be appropriated in a marked way to the general line. The Holly hedges, however, which I much underrated, are nearly 500 yards in length altogether, and the largest 25 feet high, and nearly 18 feet through: so stand Mr. Hill's corrections. To conclude, the Chestnut avenue is only 12 feet above the kitchen-garden. Although such corrections are not very important to the public at large, yet, when we take the liberty of reporting fine places, it becomes us to aim at accuracy in anything worthy of notice.

It may be remembered that I alluded to a wash Mr. Hill used for his fruit-trees; he has kindly furnished me with it. It is as follows, given in his own words:—"Mix in a large bucket lime and soot equal quantities, a good handful or two of sulphur, and as much green cowdung as will make the whole into a thick paste; add to this about one pound of glue dissolved in hot water, the whole stirred well together, and, when cold, applied by paint-brushes; such will be found to stick on, particularly if applied in dry weather. For the Peaches we use more sulphur, less soot, no lime, and a little soft-soap; this has also about a pound of glue to a bucket of the above. When cold it will be found like a jelly; if too stiff, add a little hot water."

ROBERT ERRINGTON.

EXOTIC NURSERY, KING'S ROAD, LONDON.

(Continued from page 163.)

WE left off in the large conservatory, which, with the two wings, is ninety feet long, therefore there is no choice for the first course to-day, and we must take a wing to begin with; but would you prefer a Palm wing to a Fern wing, or the east wing, full of Tree Ferns, to the west wing, which is filled with Palms? I have the bill of fare, and would recommend the Fern wing first, as the second course will be two Fern-houses, and if we get in the Palm wing between the courses it will be a change.

The first noticeable plant in the Fern wing is not exactly a Tree Fern, but it is stronger than any Tree Fern we yet know of, *Angiopteris evetica*. This has a great

root-stock like the top of the Elephant's Foot plant, from which rise immense, large-spreading leaves, on stalks big enough to make giants' clubs. The leaves of this plant average eight feet in length, and it is, in my opinion, the noblest of all the Ferns. There is a specimen of it at Kew with a diameter of full nineteen feet! It is a native of Ceylon. Next is *Dicksonia squarrosa*, a really noble Tree Fern, from New Zealand, with a trunk four feet high, and spreading leaves eight feet in length; a fine *Blechnum Corcovadense*; *Cibotium Barometz* from China, and *C. Schiedei* from Mexico; *Hemitelia integrifolia*, *horrida*, and *Braziliensis*; a fine new kind of *Alsophila* and *A. senilis*; a *Blechnum Braziliense*, and several imported stems of Tree Ferns, the largest of which is nine feet high.

The great fault of the old collectors of Tree Ferns was that of pulling them about to wrench them out of the ground, by which the roots were so strained that they died sooner or later, and festered the parts so much that the trunks gave way at last. We lost some of the finest specimens of *Cacti* through the same rough treatment; but this is so well understood now that we seldom lose one of them, all the roots being cut off most carefully just below the collar.

The borders all round, and the centre bed, are edged up a foot or eighteen inches high with artificial rockwork, and planted with dwarf Ferns and Mosses.

The west wing is arranged in the same style, with the addition of climbers overhead, the principal collection being Palms, a few Cycads, and others, of which the following were the most conspicuous:—*Sabal umbraculifera*, *Ceroxylon andicola*, *Chamærops Griffithiana*, very fine, and *C. humilis oxyphylla*, a remarkably curious new kind from some continental collection; *Cycas revoluta*, very fine; and *Latania Borbonica*, ditto. These were the very best feathers in this wing, and also the best known, as most of them have been out at the shows. Then there were *Attalea spectabilis*, *Phoenix dactylifera*, *Areca rubra*, *Martinezia caryotefolia*, *Cocos argentea* and *flexuosa*, *Chamærops Martiana*, *Areca lutescens*, *Demonorops melanochætes*, *Calamus ciliaris* and *verus*, with others, and climbers of *Cissus* and *Allamanda*, which finish this great range.

Passing out of the conservatory into a lobby in the centre vista, there is a Fern-house for greenhouse kinds on the left, and another for stove Ferns on the right, the north wall of the large conservatory being the back wall for both, which have thus a north aspect. We enter among the greenhouse Ferns, and here we find a large stock of cool-house Orchids along with dwarf Ferns on the front stage, among which a whole row of *Odontoglossum grande* were in bloom in pots, with different kinds of *Barkerias* and others hanging from the roof and in pots also, but yet on blocks let into pots, or lying across the mouth. In this house, which is heated to 50° only, almost all the newly-introduced Air Plants are placed for a first start. It is neither moist nor dry at any time, but just enough to give a gentle start to long-dried plants from long voyages, nothing in the world being more damaging to Orchids on their first arriving than to be put into a regular Orchid-house, where the heat and moisture for growing luxuriant established plants are necessarily kept up to a great pitch. Therefore recollect that, if ever you receive a consignment of Orchids from beyond the seas, a quiet corner in a shady part of the Geranium-house, and lying on a thin layer of damp, green moss, is a better place to put them for the first three months than the best Orchid-house, unless it is a cool one, with not more than 50° except from sun heat.

There was a large stock of the dwarf variety of *Lælia superbiens*, another splendid discovery by Mr. Skinner. The bulbs are as strong as those of the original, the dwarf part being the flower-stem, which is no more than

a foot, and much less sometimes. Some of these were ready to open flowers on stems not six inches long; but that must have been from the effects of the journey from Mexico. *Odontoglossum Pescatorei* from New Granada, and two or three kinds from Peru which are yet undefined; *Epidendrum vitellinum*; *Phalanopsis rosea*, a rare kind, from Manilla; *Epidendrum sceptrum* from Peru, and also very rare; and lots of more common kinds, but undergoing the first change to a civilised condition. A large importation of Ferns was in the same condition; many specimens of *Woodwardia radicans* and *Dicksonia antarctica*; the true *Lastrea villosa*; *Polystichum falcinellum*, with a root-stock like a tree (this is one of the finest of Madeira Ferns, and not difficult to manage); *Asplenium umbrosum*, *Canariense*, and *Canariense præmorsum*, *monanthemum*, *ebeneum*, and *palmatum*, all really good-looking kinds; a large stock of the scarce *Adiantum reniforme*; *Nothoclæna Marantæ*, *Lomaria Chilensis* or *Magellanica*, *Nephrodium drepanum*; and under bell-glasses large lumps of newly-imported *Trichomanes speciosa* and the variety *radicans*. They were in very open, turfy soil, mixed with freestone chips, and kept very damp, causing the young leaves to spring up from all parts of the mass. Under the same treatment, or in the same house, were all kinds of *Sarracenias*, including *Drummondi*, the scarcest of them.

But what pleased me the best was a new discovery I made myself, which accounts for a thing which puzzled me in London the last two seasons. The secret was well kept, although many were "in it." It was this—people who I well knew could not figure very high in the country for growing plants did come out first-rate with their *Wardian cases* in the London drawing-rooms; and first-rate hands at putting all things to rights in the country put everything in the "wrong box" in London. I could not fathom how such things could be, but now it is as plain as self-evident. The nurseries, at least this one under review, are colleagued with certain families, and keep the beds, rocks, and mountains, plains, waterfalls, and all manner of *Wardian-case* contrivances, in portable cases, to be removed off and on, as Parliament moves the great people up or down, to or from London. All under the stages and along the passages of this house were full of the inside of *Wardian cases*; some gutted out last autumn to be kept on purpose for next year, and some made up on purpose to be ready for fresh customers next spring; and all this going on for a long time without anybody being the wiser, except those who were in the secret, and who had it all their own way. For the future we must all have a share in this "limited" company; but, much better than all that, here is the *right way* for having *Wardian cases* at last. The old way was particularly wrong and most extravagant, and next to useless except in the hands of real professors; but now almost anybody may take up the subject anywhere. The origin of the grand secret is this—ten or twelve years ago necessity suggested seven large flat tin cases to be used inside seven large flat Bath stone vases at Shrubland Park. The "tin" was stout zinc by-the-by, and zinc will grow plants just as well as pots or boxes. All those splendid scarlet Geraniums which they grow in all the marble vases at the Crystal Palace are now grown in metal pans, and the pans are let into the vases at planting-out time, and taken out at "housing time;" and very likely most of them are kept all the winter in these very pans, to be taken off and on that way. At all events, the most costly *Wardian case* may now be filled without any danger of hurting it with soil or watering, or of the inside box getting rotten. Let the inside box fit the case like wedding-gloves; but let the box be made of block tin or zinc, with a ring at each end to lift it in and out, and a small spout run down from one end or side to drain it into a china basin hard by—such a spout

as you will see described in the second or third volumes of *THE COTTAGE GARDENER*—for each of the seven vases aforesaid. Now, there ought to be at least four sets of these boxes for one case; they ought to be planted only by such men as are capable of being judges of Ferns at the exhibitions, so as to last for years. They should be changed occasionally where there is a hothouse or a good greenhouse, to renovate the plants as it were. It is not worth while to take such boxes far into the country; but, being free of them, the cases may be packed for any distance, and fresh tin boxes be ready to put into them at home. The nurserymen will winter the London cases for so much a month, and they will supply “ready-established” boxes to put into drawing-rooms the next day, and look as if they had been on the system for months; at least, Mr. Veitch could do so now from what I saw. Therefore, if you happen to have one of these Wardian cases lying idle in London, and if you recollect the bother there was in getting it to “go” every season since you had it, make use of this secret until you hear of a better. Write up to your London nurseryman, and tell him to get a zinc box made to fit your case, and to fill it at once with such Ferns and fancies as he knows will thrive in such a place as yours, so as to be all fresh and flourishing by the time you go up to town; but have a clear understanding as to the expenses, and all about it. What I would do, or rather, should be obliged to do, would be to have two tin or zinc boxes for my case for the London season, because people expect to see such gardening in better style with me than with the Duke of Scotland, who was never much noted for good gardening, at least in the fancy style. I would “keep” the second box at “my” nursery as I would my horses at a livery stable. D. BEATON.

(To be continued.)

WINDOW GARDENING FOR THE WINTER.

A GREAT variety of inquiries have led me to devote a chapter to their consideration. To enter very minutely into every case would require a dozen chapters, or even double that number. Without such minuteness I trust I shall meet the gist of most of the cases. If anything escapes notice I hope the parties will just send another pennyworth of inquiries to the Editor. It is understood that these notes have reference to gardeners who have nothing but their windows in the shape of glass. The matter would be greatly simplified to them if they felt that all the rules given for good culture in common greenhouses are just as applicable to plants in windows, or rather, more so, because the difficulties, in winter especially, are increased in the case of the window. I have noticed several instances lately (one of them in a closely-inhabited, narrow street in Leith, and which I regretted I had not an opportunity to examine) in which a glass case seemed to fit a portion, at least, of the lower sash of a window, so that it could easily be placed outside the sash in summer and inside in winter, and thus the plants be protected from the dust of the street in summer, and yet fresh air be given to them without greatly cooling the air of the room in winter. With such contrivance and a good aspect, many plants, if not too large, can be grown as successfully in a window as in a greenhouse.

It is quite a mistake to suppose, as many of our friends do, that we are careless about window gardening. That it is not oftener referred to is just because so much has already been said about it in these pages that a new idea can hardly be advanced, and that, until lately, few inquiries have been made. My hopes as to anything strikingly original and good in this direction centre chiefly upon our window gardeners themselves. Meanwhile, we should all be glad to assist them if we

could, not merely because we should wish them to love what we love, but because we know that the loving plants and flowers insensibly makes men and women better. I have noticed that love for flowers, associated with great ignorance, with a rough exterior, with forbidding manners, and conduct the reverse, at times, of what the rigid moralist would approve; but, wherever attachment to flowers *for their own sake existed*, I have never sought for without finding a soft, sweet, kindly spot in that man or woman's heart, and also experiencing that taking an interest in such favourites was the best means for getting at the brightest side of their possessors—a fact which the true philanthropist may not deem unworthy of notice.

I shall first notice the generalities to be attended to, and then mention the plants most suitable for winter blooming, &c.

1. ASPECT.—“A CONSTANT SUBSCRIBER,” who has two windows facing the north, two facing the south, but somewhat shaded by a manufactory, complains that his Fuchsias and Geraniums have done badly, wishes to have a Camellia, Hyacinths, and other bulbs, and asks if he may expect success; and I say, Yes. All aspects are useful in summer. In winter a north window is chiefly useful for preserving plants, and allowing them to lengthen very slowly, and for setting plants in for short periods when they are in bloom. Most growing and flowering plants would prefer the south windows in winter: the one class of windows will thus act relatively to each other. A Fuchsia or a Geranium in full bloom in July will remain longer in bloom at the north windows than at the south. The dropping of flowers that some of our friends complain of, when placed on north, east, and west aspects, is less the result of deficient light than improper watering and a dry or an impure atmosphere. In dull weather in winter flowering plants will do best in a south aspect, then west, then on an east aspect, and worst on the north, though they will keep and grow slowly very well there. The slight shading from a manufactory that our correspondent speaks of is less to be dreaded than what may come from its and other chimneys. Its shade may save the use of a muslin curtain in summer.

2. SOIL.—There are several complaints of being puzzled about composts. There is little reason. Gritty soil found under the turf on a road-side, if well aired for some months, or even used at once mixed with a little sandy road-drift, will grow almost every plant that would be a real ornament to the window. When used, be sure it is neither wet nor dry—so moist that, when you squeeze it in your hand and hold it for half a minute or so, it will retain the marks of your fingers when you open your hand; but so dry that, when you lay it down gently, it crumbles, and the marks disappear. Unless in extreme cases, however, you have no use for soil for

3. POTTING NOW.—It is chiefly wanted for bulbs if you have not potted them previously. A very little leaf-mould or rotten dung may be added to the soil. If not very rotten, sweet, and well aired, let the pots be full of roots, and then add a little of your rotten dung as a surfacing. Proceed thus—drain the pots, place a little moss or chopped straw, &c., over the drainage, and then place the soil in, not firming it much, leaving space for the bulbs to stand with their necks just level with the surface of the pot, when the soil may be pressed rather firmly all round them. A four-inch pot will do for a good Hyacinth bulb, for two or three Jonquils, for three Tulips, and half a dozen Scillas, Snowdrops, and Crocuses, when you wish every pot to be a mass of bloom. Large Narcissus bulbs should have a six-inch pot. The treatment of the bulbs before the pots were filled with roots was given lately. Every house, in the shape of cellars, cupboards, store-rooms, &c., supplies a good place. When well rooted the kitchen window, or

even placing them near the chimney-piece at night, will cause them to grow faster.

For other things at this season potting should be avoided. If any minutiae still perplex you, we should prefer settling all them in March. There are chiefly two circumstances in which repotting may seem necessary. One friend tells us that the earth is raised in little heaps over the surface of the soil, and chiefly near the rims of the pots, and that though she removes it, or levels it down, it is as bad in a day or two. This tells us that there are worms in the soil, and they must be got out. A thorough watering with lime-water, such as placing a large table-spoonful of quicklime in a gallon of water, and using it when allowed to settle clear, will either kill or start them. But the worms have very likely made the drainage defective, and, instead of this watering with lime-water in winter, so as to give such a soaking, it would be preferable to turn the ball of such little plants out of the pot, holding it reversed, well-poised on your hand, snatching at and pulling out every worm you can perceive, and sending a small wire, not much thicker than a needle, through and through the ball, which will drive out the slimy fraternity from their castle in the centre; then fresh regulate the drainage, and place the same pot, cleaned, or another clean one of the same size, carefully over the ball again. I would recommend the same plan with a plant that had become water-logged at this season. Try to remove the clogged-up soil, and break and take away what roots there are in it. Let the soil get dried by the improved drainage, and pricking up the surface to let the air act upon it, and, if not too far gone, it will again become a healthy medium for the roots; at least, less danger will be incurred if you do repot after the soil in the pot has thus been made rather dry. All soils thus used should be well aired, and at least as warm as the atmosphere of the room. I have seen nice little plants taken from a temperature of 55°, and incased in fresh soil at 35°, and immediately watered with water at about 38°, and could hardly help wishing that such gardeners had been whipped out of a warm bed, and for once made to do penance for half an hour by standing in the only covering nature gave them exposed to a cold, rainy sleet. All sudden extremes of heat and cold, of wet and dryness, must be avoided.

R. FISH.

(To be continued.)

EARLY POTATOES.

Few things are more generally esteemed than the first young Potatoes of the season. Rich and poor alike seem to welcome this favourite production. The interest attaching to them is in no degree altered since disease has restricted the general use of older ones to the more affluent, the poor being unable to buy Potatoes for use when their cost exceeds that of bread or other substitutes, consequently they are the more ready to welcome the young crop when they first make their appearance; and though the wealthy may have what is called "young Potatoes" all the year round, still there is a time when the rapid growth which immediately precedes the time of digging them up for storing is such as to justify the term "young Potatoes," which all do not deserve that have that name attached to them; for it is not unusual to preserve old Potatoes until September or longer, and then plant them. The half-matured crop they are only then able to produce has been often enough called "young Potatoes," whereas the more proper definition would be "retarded Potatoes," as they simply attain a certain size, and continue in that unripened condition all winter, being at all times ready for use when wanted. Certain kinds are said to be very good when treated that way, soil and situation also having much influence in

the matter; but the best are not so good as really young Potatoes advancing under a healthy growth towards maturity; for, be it observed, the retarded kinds have been arrested in their progress that way, and they generally get the worse in quality as the season advances, as they are not ripened sufficiently to keep well, and, consequently, become worse either more or less through the winter. The cause of this is that they are expected to be grown out of doors in some sheltered spot, where they can also be covered up in hard weather. This retarded crop not being in any way a substitute for the early one, we shall offer a few remarks on having those at the earliest period attainable with humble means. The more wealthy classes have made a beginning for the same purpose long ago.

When fermenting materials—as tan, dung, or leaves—abound in sufficient quantity to allow of their being made into a sort of hotbed, there cannot be anything more useful. A frame and lights are also necessary at first; but the robust character of the Potato is such that almost any make-shift in that way will do instead of the close-fitting frame so necessary for Cucumbers, Melons, and other delicate plants. The conditions necessary to grow Potatoes are a gentle bottom-heat and abundance of air at top. Of course, cold, frosty blasts are hurtful, if not fatal; but holes in the frame or covering are not so injurious here as in more tender crops, although the least touch of frost is equally fatal as to other things.

If, therefore, a large quantity of young Potatoes are wanted not particularly early in the season, and heating materials are to be had, let a bed about six feet wide be made, and any length required. On this fasten some slabs or boards on edge, and a few inches from each side and each end, and this bed, which we will suppose to be about three feet thick of fermenting matter not likely to overheat, cover over with good garden-soil about eight inches deep or more, and on this plant the Potatoes, in rows about eighteen inches apart, and the usual depth and distance apart in the row. This done, let some strong hazel or other rods be bent over the bed about a foot or less apart, and some others fastened to these longitudinally, so as to form a sort of continuous arch. On this throw over mats or anything else that can be had; an oil-cloth is best, as it excludes cold rains, but neither a single oil-cloth nor mat will keep out more than 8° or 10° of frost; consequently, in the early part of the season, if this bed be in work, some straw, fern, or other covering must be added as well, and if this be before the Potatoes are fairly through the surface it would be better to lay such litter over the soil at once, and cover that up with the oil-cloth or mats, for dry straw or other dry material is better than wet.

This homely make-shift may be altered many ways, and the ingenuity of the operator will, no doubt, devise something useful in the stock of things at his command. One thing, however, must be borne in mind—this crop cannot be expected to come in so early as one having all the advantages of a close-fitting frame and other appliances; therefore, when Potatoes are wanted particularly early, it would be advisable to have frames for this purpose; and as it is necessary, on all occasions, to husband what resources there are, especially bottom-heat, which cannot at all times be renewed when it fails, it would be better to start the Potatoes intended for planting in pots, in some warm place, and the bed intended for them need not be made for a fortnight or three weeks later, and the heat will consequently be continued so much longer in spring when it is wanted. In fact, I think, and have often found, that a bed made up and undergoing all the chilly effects of a hard frost for, say a fortnight, loses its heat three weeks or more sooner than one working in fine weather. This, therefore, renders it advisable to start the Potatoes somewhere

before they are planted out, and it is likely they will come sooner into use, provided that they are not kept too long in the pots they are started in.

To have Potatoes very early the general mode is to get the tubers intended to be planted ripened early the preceding summer, and in November, or early in December, they are planted in a nicely-prepared hotbed, where there are the means of keeping up a continuous heat. Of course, in cold, frosty weather, there is the necessity of keeping them covered up for several days, or nearly so. An opening, even for an hour or two, will be then of great service, and may generally be adopted. The other conditions are easily effected, as the Potato is very accommodating, and though a too close confinement is apt to produce more top than root, still there is a fair chance for a crop when that top can be saved.

Of the kinds proper to plant in frames some difference of opinion prevails, and every one has his favourite sort. A few years ago round ones, under various names, were much grown; but they have gone into disrepute of late, and the Short-topped Kidney, of which the old *Ash-leaved* is the type, may be regarded as the most fashionable now. It is one of these kinds that I plant, and though differing a little from the parent in some of its features, it may still be regarded as an "Ash-leaf." It is useless, however, giving its name, as that is but a local definition, and doubtless many other useful Potatoes have the same; for, like Cucumbers, every grower has his "own sort," which he places most confidence in. To the amateur I would say, therefore, plant good tubers of the old Ash-leaved after they have been proved to be sound by first starting them in a warm place as above directed; and if he be anxious to try experiments, as I think all amateurs ought to be, let him try some other sorts as well in the same bed, and be guided another year by the result. I need hardly advise which to try, as new sorts are often advertised, and the quantity required for a frame is so small as not to deter any one from procuring those he thinks may turn out best.

We are more in want of really new sorts of Potatoes than any one article else, unless it be Peaches and Apricots, which, strange to say, have received few additions during my gardening lifetime. J. ROBSON.

ADVICE TO UNDER-GARDENERS.

I WOULD advise all youths who intend to become gardeners to get as good an education as they possibly can; and all those who have not had an education I would advise to acquire it themselves. I fancy I hear some of our easy young gardeners saying, "Yes; but that is easier said than done." Not at all. But perhaps it would be interesting to some of my readers if I were to give them my "rise and progress." I was born of very humble parents, and it was my misfortune to lose my father at the age of four years. I, unfortunately, never could go to school except on Sundays, and then only for a very short time, scarcely knowing more than my alphabet when I left. I was sent, at the age of ten years, to a local nursery, where I remained two years. I then got into a gentleman's service, where we had a splendid collection of plants, comprising orchideous, stove, and greenhouse plants, and a collection of alpine numbering fifteen hundred species. How I regretted, at that time, that I could neither read nor write; but I made a resolution thenceforth to practise both reading and writing every day. I stayed in that situation three years, and have had four changes since then, and stayed two years in each. I am now twenty-two years of age, and holding a very responsible situation as head-gardener. This is one small instance of what can be done by perseverance.

The branches of learning a gardener most requires are mathematics, grammar, drawing, writing, and natural history. Let each young gardener, as soon as his employment is over for the day, make himself tidy, and then turn to his books.

I think he would do well if he were to devote the major part of his time to reading works upon gardening. The works I have chiefly read are, *THE COTTAGE GARDENER*, *THE COTTAGE GARDENER'S DICTIONARY*, and *LOUDON'S ENCYCLOPEDIA OF GARDENING*, McIntosh's Works, and many others, —all good works. But there is one thing I would call particular attention to, that is, botany; for it is the key to all gardening matters, and young gardeners will do well to give it their best attention. How unpleasant it must be to a gardener when a lady or gentleman asks him the meaning of (for instance) *Galanthus*, to be obliged to say he really does not know! If gardeners in general would pay a little more attention to botany I feel persuaded they would derive benefit from it. For introductory works upon the natural system of botany I believe nothing will surpass Lindley's *Introduction to the Natural System*, and Professor Balfour on the Natural System; for the Linnæan, or Artificial System, as it is termed, I believe Smith's *Introduction* cannot be surpassed at its price. After the reader is well acquainted with these he may procure *Loudon's Encyclopædia of Plants*, or his *Hortus Britannicus*, both excellent works; but for practical gardening I do not think *THE COTTAGE GARDENER* can be surpassed.

I would advise all young gardeners to be very neat and economical in their dress. I am aware that their wages are not very high, but surely they are better than many who have to serve an apprenticeship till they are twenty-one without any pecuniary recompense whatever. They will likewise find it a great assistance to be civil and obliging to every one, and especially to their superiors. A kind word is as soon said as a cross one, and it costs the giver nothing. Let every one spend his money on something that will be beneficial to him, and, above all, let him abstain from that dire curse, drunkenness.—YORKSHIREMAN.

BEEES IN SCOTLAND.

"Lo! from the regions of the north
The redd'ning storm of battle pours."—ANON.

THE East, I should say, has afforded us quite sufficiency of "war and rumours of war" to satisfy any ordinary appetite even for a lifetime; besides, it is altogether antagonistic to my nature and feelings to fight. Moreover, having the credit of the North at heart, I am anxious to show a good example; and, further, I should act foolishly were I to outrage my nerves by taking the trouble to knock Mr. M'Lellan down when I can settle the matter by quietly closing him up. Nevertheless, when I read Mr. M'Lellan's boast about "jousts and tournaments," and of "dames and ladies fair" as spectators, I must, in candour, admit that I felt a thrill to the finger points—a something which spoke of a pugilistic propensity; but the feeling was momentary, and, as it passed away, I caught myself murmuring, "Really Mr. M'Lellan understands more about the management of fine sentences than he does about the management of bees."

Mr. M'Lellan's references to the gay, the grand, and the primitive so far dazzled my poor matter-of-fact self that I began to pause when I came to the words "Adamic or Methuselan class." "Dear me," I said, "and did those old worthies work bees on the storied system? Then I rejoice that chloroform is a discovery of modern date, else they might have worked with it too."

Mr. M'Lellan is quite mistaken when he supposes that I have never used chloroform. I spoke against its use after much experience and many trials, and from a knowledge of a far better plan. I do admit, however, that it may be a good thing in the hands of the novice, who has a wholesome dread of wounds and swellings. It may be good, in such a person's hands, if it should only keep him from using a worse agent. To listen to the "murmur which gradually increases until it becomes a roar, and then again gradually subsides until all is quiet and still," must be as sweet music to the ears of the uninitiated. Verily the timid highwayman has reason to bless this "great modern discovery."

I take it as a matter of regret that Mr. M'Lellan, in his article which appeared on the 23rd of September, did not even give a hint of his "keen mental struggle between what he knew was right and Mr. Taylor's rule." In one

portion of that article he is so well pleased with what he had done that he thought he was only making "sure doubly sure" by removing his hive to an immense quantity of white clover; but his high hopes were all blasted, and then we find him only "fancying he saw his error was in giving too much room." A stream of knowledge has, however, apparently flowed in upon Mr. M'Lellan between the 23rd of September and 11th of November; for, at the latter date, we find he has nothing to learn respecting the placing of boxes *above* or *below* the stock-box.

I would here remark that a practised bee-keeper will acknowledge nothing like fixed rules in the management of that which is affected by such a variety of causes as time, season, locality, and ever-varying circumstances.

The Glasgow gentleman's stock of Stewarton honey affords a strong argument in favour of our management as compared with Mr. M'Lellan's. Taking Mr. M'Lellan's own statements the case may be stated thus:—

	1855.	1856.
Stewarton	Fifty boxes.	Seven boxes.
Rutherglen	Something.	Nothing.

I was not a little astonished to find we enjoyed such a fine district, comparatively speaking. Mr. M'Lellan compares Stewarton to Eden before the fall; but may my friend not be labouring under some mistake? I should say he has spent his honeymoon somewhere near us, as the reminiscences of such days can alone account for his glowing opinion of our quarter. We, like ungrateful sinners, have been in the habit of calling this a backward place, more than usually given to rain; and as to "sixty acres of white clover" in one piece, a tithe of this would make our fortune, even without the Lime-trees mentioned by Mr. M'Lellan.

Mr. M'Lellan infers that I am one of those who walk in the footsteps of their grandfathers, and I am proud to say that I do in many good things. In bee management, however, I have deviated wonderfully; and, along with a few others, I have long been engaged in bringing to perfection a system thoroughly known, I fully believe, only to ourselves. We have been too earnestly engaged in this one pursuit to pay much attention to any other.

I have a great love for figures—they appear to me much more conclusive than words, and I will just state a few of the results of our system; and, if Mr. M'Lellan's can outdo us, then we must capsize our pet boxes and take to the better plan.

Here let me remark that we have sent to the market the finest honey produced in this country; and the Glasgow gentleman already referred to will no doubt tell Mr. M'Lellan, should he ask him, that Stewarton honey has no rival. This settles the question as to quality, and the figures will speak as to quantity. I hope to see Mr. M'Lellan *figure* in THE COTTAGE GARDENER on this subject at an early date.

Within the last few years our storied system has, among others, produced the following results:—One hive yielded 60 lbs. white comb, and was left 70 lbs. in weight; another yielded 60 lbs. comb, a good swarm, and each hive, young and old, at the end of the season weighed 50 lbs.; a single swarm produced 54 lbs. comb, and was left 50 lbs. in weight; and we had a hive of which the particulars of comb abstracted were not taken, but it weighed gross 180 lbs.

And now, Mr. Editor, I consider this a subject of importance, and would have written sooner, but our "honey season" in accounts is on just now; and I have been so busily engaged looking after the "bau-bees" that I was obliged to leave the "honey bees" alone.

I cannot close without begging of Mr. M'Lellan to be very careful when he handles chloroform, until he has brought forth from the mighty womb of the future that all-important secret "anent filling glasses without brood," which is to be the great advent of next season. Should chloroform deprive us of the expected "wrinkle," I should then "hate, abhor, abjure, condemn, detest it" henceforth and for ever.

—ROBT. WILSON, Stewarton.

[You will confer a great benefit on the community by giving a full detail of the Stewarton system.—ED. C. G.]

NAMING FLORISTS' FLOWERS.

MR. BEATON would have made an excellent advocate. I do not know when I have seen a more triumphant vindication of a bad case than his article on the *Diadematum* controversy, page 149 of THE COTTAGE GARDENER for this month.

It appears now, as any one might have guessed, that the name in question was not original, but that Mr. Beaton had, in an unguarded moment, followed the practice which he so justly condemns, viz., "of honest people putting their fingers into other honest people's pies without knowing of what they are made." That this is the case is evident from the fact of his adding the word *regium* to Sweet's name, *Pelargonium diadematum*, and translating it *Royal Diadem*. (Vide page 271 of the July number.)

I congratulate Mr. Beaton, however, on having relieved himself of the responsibility of giving such a name as *Diadematum* to a plant, and hold Sweet to be the guilty man. This is one instance out of many, perhaps more glaring, which shows the absurdity of any one ignorant of what constitutes pure Latin or pure Greek turning over the pages of a dictionary or lexicon in search of a name for something new. The object of giving classical names in scientific matters is, that they may be understood at once all over the world wherever scholars exist. It is to elucidate what is unknown by what is well known. When, then, a person ignorant of the classical languages betakes himself to a dictionary to enlighten the world on his discovery or invention, he does not know that it comprises the constituents of a language spoken in its various stages of purity and corruption for a period of nearly 800 years; that it contains words used by writers of authority, and others used by writers of no authority whatever, whose writings 999 out of every 1000 scholars utterly ignore; and, therefore, the chances are very much in favour of his rendering his meaning obscure instead of plain: *ignotum per ignotius*, as has proved to be the case in this instance of the word *diadematus*. It would be as if a writer on science, 200 or 300 years hence, were to use a word coined at the present day at the gold diggings in California under the impression that it was pure English, and, therefore, well understood by cultivated English scholars.

Let me assure Mr. Beaton that the word *diadematus* (adjective or participle) is a "barbarism" (Pliny's *Apollon diadematus*) would be with Cicero *diademate indutus*; and "barbarisms," whether in "a trade-list," or a garden, or a composition, are much to be deprecated.

I agree with Mr. Beaton that this is quite a parallel case to Dr. Lindley's title, "*Nixus Plantarum*," which, simply, does not mean "the tendencies of plants." The significations of *Nixus* or *Nisus* are travail in childbirth, pain, trouble, and (its fundamental meaning) a leaning or resting upon. This last was beautifully applied by Cicero in a figurative sense to the motions or revolutions of the heavenly bodies, indicating their *dependence on each other*, a sense which is by no means pertinent to Dr. Lindley's subject. *Propensiones Plantarum* would be the Ciceronian expression.

In conclusion, I beg to inform Mr. Beaton that "H. C. K." and "SYLVESTER" are neither identical nor convertible terms.—H. C. K.

STEPHANOTIS FLORIBUNDA.

No collection of stove plants, however limited, should be without this charming climber. Its dark green, leathery leaves, contrasting so well with the pearly whiteness of its large and deliciously-scented blossoms, has gained for it a fame that but very few of the inhabitants of our plant-stoves can lay claim to.

I will here detail the practice which, if followed out to the letter, will produce plants in first-rate excellence; not merely a large plant with here and there a bunch of bloom, but one covered all over with bloom nearly as numerous as its most ample and enduring leaves; and then what an object to look at! Let a thousand individuals go into the stove or greenhouse when it is in full bloom, and mark if one out of that number goes out again without exclaiming, "What a beautiful thing! What a splendid plant!"

In February or March take a good healthy plant in a

6-inch pot, and repot it into a 12-inch pot at once, using one part turfy loam, one part turfy peat, a liberal sprinkling of bits of charcoal, and a little silver sand, all well mixed together, but not sifted. Put two inches of charcoal at the bottom of the pot, and cover it slightly with moss, to prevent the soil getting amongst the drainage.

In repotting the plant, loosen the roots a little, and spread them out as much as possible amongst the fresh soil, which press down firmly, and finish off evenly to within one inch of the rim of the pot. Tie the plant up to a stick, and give it a light, warm position in the hothouse. A slight bottom-heat would hasten its growth; but it will do very well without. Be very careful about the watering at the beginning.

As the plant advances in growth train it on some wire or string all along under the roof, and, if all goes on well, it will by the autumn have made a shoot some twelve or fifteen feet long. In October coil the plant round a few sticks, and remove it to a temperature of 50° or 55°, giving it but just water enough to keep it alive. Let it remain in this state until the following February; then repot it into a 15-inch pot, using the same kind of compost as before. Give it a good, large, barrel-shape trellis, around which train the plant in a spiral form, and give more heat and light, as you did the year before. Young shoots will soon make their appearance at almost every joint, and begin to coil around the trellis in every possible form; but they must be drawn carefully away, and be allowed to hang carelessly about, so as to be exposed fully to the light and air, whereby they will grow closer jointed.

As the bloom advances to maturity the branches can be tied in and regulated to the best advantage.

As the blossoms expand remove the plant to the greenhouse or conservatory, where it will keep in bloom a long time. I have known a plant keep good for a month or six weeks on the top of a staircase, and filled the house with its perfume, most amply repaying one for all the pains taken with it.

As the autumn comes on it must have the same treatment as it did the previous year, and in the spring it should be pruned exactly as you would a Grape Vine on the spur system, cutting back every lateral to one eye, and this severe pruning must take place every year. During its growing season it should have manure-water about twice a week, and should never be shaded except when in bloom.

Its propagation is effected by planting cuttings in the usual way for stove plants.—W. H. MOULD, *West Everleigh, Wilts.*

CULTURE OF HOYA BELLA.

I PERCEIVE, in one of the August numbers for this year, Mr. Appleby has given an article on the grafting of *Hoya bella* upon *H. Bidwilliana*. I can bear testimony to the health and vigour of Mr. Acombe's plant, as I have seen it frequently both before and since Mr. Appleby saw it; but, with all due respect to Mr. Appleby, I certainly cannot say that the plant would stand the test of an exhibition table against some other specimens that are to be found in the neighbourhood that are grown upon their own roots. I am rather surprised to hear Mr. Appleby make the assertion that he seldom meets with well-grown plants of *H. bella* on its own roots out of London. This, I think, is calculated to mislead the amateur, and such as would otherwise attempt to grow one of the loveliest of our stove plants. For my part I consider it one of the easiest of stove plants to grow. I have grown it two feet and a half high, and as much through—not with a few shoots stretched out to make it extend the above width, but with as many branches as were possible to be in without crowding them.

As this *Hoya* is one of the best (but not the best; I will tell you of the best some other time), and such as every amateur may grow that has a stove or intermediate house, I will state what I have learned and know about it from experience.

Suppose any one were to begin with a small plant from the nursery about next March. If it has travelled any distance, put it in the warmest house, where it will be partly shaded for a few days. At the end of, say a week, turn it

out and examine the roots. If they are showing nicely through the soil you may repot it in a pot two sizes larger, after loosening the old soil a little with a sharp-pointed stick. In potting use plenty of drainage, and be sure to keep the collar of the plant well above the edge of the pot, for here lies the secret of this plant damping off at the collar. Many people never think of raising the collar of a stove plant above the level of the soil, as they would do with a Heath, or other choice greenhouse plant.

When the operation of potting is finished, return the plant to its former place for a week, but give it no water, provided the soil is in good potting condition, that is, neither too wet nor over-dry; but give the plant a slight dewing with the syringe once a day. At the end of a week remove it to near the light, and give it a good watering; but remember to keep the spout of the water-can from the stem of the plant, for I have seen many people water plants. And where do they let the water fall? Not round the side of the pots; but nine out of every ten will pour on the water close to the collar or stem of the plant, and such plants as *H. bella* will not endure it.

As soon as you perceive the plant begin to grow away strongly, tie the branches down near the pot's top at equal distances, and stop them all round. This will cause almost every eye to throw up a shoot, which should be tied out as it grows to admit light and air.

If all goes on well the plant will require another shift into a larger-sized pot about the middle or end of June. Stop all the branches about three weeks before this repotting takes place, so that the plant may break afresh before it is potted. Use the same precaution to keep the plant well up in the pot, and be cautious with water until the roots have taken hold of the fresh soil. Give it a temperature of from 60° to 75° all through the growing season, with plenty of moisture in the atmosphere of the house.

Towards autumn bring the plant as near to the glass as possible, and give it more air and light, with less moisture both at the roots and in the atmosphere of the house. This will ripen the wood well up before winter, during which season it may be kept in a house ranging from 45° to 55°, but it will not stand a much lower temperature without injury. Through winter it will require but very little water at the roots.

The following spring take your plant to the warmest house, and proceed in the same way with potting, syringing, &c.; but do not stop the shoots this season, except there be a shoot that is growing away faster than the rest, in which case I should tie the top of it down instead of stopping it, which would cause it to throw out side-branches and equalise the growth; but keep the shoots tied out, so that the plant gets all the light and air possible. At the end of the second season you will have a nice little sturdy plant, furnished with green foliage down to the pot top, and all sides alike.

As for grafting, I think, if I were going to graft *Hoya bella*, I should get a large shoot of *Hoya imperialis* and root it. Then I would graft *H. bella* upon that, about three inches from the soil; for I think this is the likeliest way to make a good plant from grafting.

The soil I have always found *Hoya bella* to do best in is composed of good turfy loam one part, good leafy peat two parts, and soft, burnt brick one part, broken small. Mix these well together, and put it into a fine sieve and sift it. What goes through the sieve put by for anything you may think it useful for; what the sieve retains put on the potting-bench, and mix some white sand with it. In this way you may pot *Hoya bella*. After the plant is potted put a little sand over the compost, to exclude, or rather, to partly exclude, the air. In such it will grow to perfection without damping off. I have said nothing about flowering, for if the plant is grown well there will be no difficulty about its blooming, as it is such a free-blooming plant.—W. DYMENT, *Leeds.*

MEETING OF CULTIVATED FRUITS AND VEGETABLES TO PROTEST AGAINST THE WASTE OF THEIR FOOD.

A LARGE Meeting of Fruits and Vegetables was held on Friday, November 14th, at the Globe Artichoke, Pine Apple

Row, London, to take into consideration the sewage of London and the amalgamation of the Irish charred peat with it; His Royal Highness the Black Jamaica Pine Apple, President, in the Chair, supported on his right by the Black Prince Strawberry, and on the left by His Royal Highness the Prince of Wales, son of the former. The Vice Chair was filled by the noble, healthy, and luxuriant Mr. Cabbage, from the Fulham Fields, supported on the right by Mr. Black-spine Cucumber, and on the left by Mr. Celery, from Jamaica Level.

The President rose, and said, "Mr. Vice and brother gentlemen, this is not the first time that I have appeared before large assemblies; but I assure you that it is the first time I have ever met to discuss the present large and momentous question regarding more food for our now increasing wants (hear, hear). I wish every one of you to give all the information you possess to this very important meeting concerning liquid-manure and charred peat as a food for your families before we separate, as most of us will have to attend another large meeting in Covent Garden to-morrow morning (hear, hear). In the first place, I shall give my little experience with liquid-manure, and it is now just about thirty years ago since my family became acquainted with that splendid liquid food; and it was pretty strong, too, as it flowed from cow-houses, piggeries, stables, and the like. This was at Ashburton House, Putney Heath. We kept as a profound secret what we were fed upon, for in those days our best friends would not even shake hands had they known what luxurious food we lived on (great laughter). Until then we never weighed more than two pounds. Look at me now (hear, hear, and great cheering from Mr. Melon). Therefore I say, Brown stout for ever (roars of laughter). At table I often laughed when observations used to be made at seeing such a large, fat fellow. 'No go,' says I, 'I must not divulge the grand secret.' I only laughed behind my crown (a significant nod from the Spanish Onion, with general cheers). This was the commencement of liquid food with my illustrious family."

The President then sat down with great applause, followed by general cries for Mr. Vice and Mr. Spanish Onion.

Mr. Onion rose, and said that "he had long understood that his friends in England throw all their best vegetable food down drains, while, in his country, every drop of liquid and every bit of solid are saved, and put on to the ground. The President tells us that his acquaintance with liquid-manure only goes back to thirty years. In my country we can go back to three or four hundred years. Every woman in our country knows the value of what you call filth or waste, and saves it up as if it were gold; and so it is—it is the soil's gold (loud cries of hear, hear). I ask you, when your master gets a sovereign does he throw it into a waste drain? (Laughter, and "I wish he may get it" from Mr. Gherkin, of Bedfordshire.) Manure in any shape to the land is like gold dust to the owner. The owner cannot flourish without money, nor can the earth unless it receives a fair proportion of organic food, which, in our country, we call *humus* (hear, hear). If the land is poor in *humus*, you may expect a shabby return from it (hear, hear). Here am I, gentlemen, as a fair specimen of my country, weighing nearly four pounds (laughter). Look at my English brother opposite. Why, he has not arrived to three quarters of a pound (roars of laughter). Excuse my broken English, gentlemen. Did you think we are a different sort? Not a bit of it; dissect us both, and you will find just the same number of scales or envelopes, for he is descended from the Onions of Spain. Why, my brother is completely starved for want of organic matter. It is true we kept the thing a profound secret, not only because we were making a good thing of it (laughter), but, as the President said in his case, people would have nothing to do with us had they known what sort of food we were fed upon (great cheering). I can assure you, gentlemen, I feel a lively interest in this great meeting, and seeing in the English papers that Sir Benjamin Hall had lectured the board of health, and thinking that that board might be composed of some of the vegetable kingdom, as some one said they had wooden heads, I came over to assist my English brothers in this great undertaking (immense cheering); but, to my great surprise, I find that that board is composed of linen-draper, tailors, shoe-

makers, barbers, and the like (roars of laughter), evidently not the right men in the right place (tremendous cheering). In conclusion, I do hope that we shall be able to show to the world that all towns make an immense quantity of rich manure, whether solid or liquid, and that it ought not and must not be thrown into the sea" (tremendous applause).

(To be continued.)

IMPROVING THE TURF OF A LAWN.

I SHOULD like to give the history of changing a very bad lawn into a very beautiful one, for, doubtless, there are many of your readers in the same predicament that I was before I applied to you to know what to do.

Having stated my case I received instructions, written by one of your contributors, whose unerring judgment and practical knowledge, when given to the world on paper, lead the amateur much more frequently to success than failure—at least, I can speak for myself. I know that such success is your most gratifying reward. Thus much in the way of thanking you.

The directions I read are to be found in an early number of February last. (No. 384, p. 328.) Now to the *modus operandi*.

Early in January I set a boy and a girl to take out all the daisies, plantains, and broad-leaved weeds they could put their eyes or fingers upon. They were each armed with a dinner-knife cut down to about four inches in length, and ground, chisel fashion, at the end; and, during the open weather of the first two months of the year, they managed to get out about (certainly not less) a cart-load of different sorts of weeds. The lawn contains about 1100 square yards, under a quarter of an acre. In March, as the weather permitted, I had twenty-five loads of mould wheeled on in an unscreened state, and after that was levelled down I had two loads of finely-sifted cinder-ashes equally scattered over it. The whole was then well raked with hay-rakes, the lumps all broken down, and the larger stones drawn together in heaps and taken away. The same thing was then done with fine rakes. I then had it rolled—it was at this time perfectly dry, the weather being very much so at that time—and then raked up again, after which I had twenty-one pounds* of fine lawn grass-seeds sown, and then it was gently raked, and finally rolled.

On the *first of April* hardly any grass was to be seen, and I think, by a good many of my friends not so well up in the matter as my instructor, I was looked upon as a fit and proper representative of that day; but on the first of May—lo, the change!—there was no mould to be seen. Early in June it was mowed, but one way only for the first time, and since that all has gone "merry as a marriage-bell," and it promises, with proper treatment, to be everything that can be desired next summer.

I assure you that three years ago I looked upon it as a hopeless task to attempt to regenerate it, and, although I had some pretty good flowers, they were swamped by the masses of daisies in every direction.

The quantity of mould and proportion of ashes were not in accordance with those prescribed, but my necessity compelled me to cut them down.

My only object in asking you to publish this is to give courage to those who may feel dismayed at the appearance of their lawns.—ANTI BELLIS.

THE PEAR—ITS PROPAGATION AND MANAGEMENT, &c.

THERE is so much resemblance between the various stocks for fruit-trees, as to size and general training, that it is needless to repeat in full detail every proceeding connected with them. However, in order to make my directions explicit, I will slightly touch on the history of the stocks in each kind.

The Pear, as our readers will mostly know, is worked both on the Quince stock and the wild Pear. There

* Fourteen pounds from Messrs. Sutton, of Reading, and seven from Mr. Denyer, of Gracechurch-street, being coarser, for sowing under trees.

has been much difference in opinion as to the respective merits of the two stocks, some advocating the Quince alone, others part Quince and part the free or wild stock, and a third party insisting that the wild or Pear stock is the best after all. I do not intend here to attempt a settlement of the whole question; such is not possible; I may, however, perhaps, be allowed a few remarks. I may begin by observing, that there can be little doubt that, where early-bearing and dwarf habits are required, the Quince has, doubtless, the advantage of the free stock in most cases, especially with those Pears which are known as shy bearers. The Quince stock, however, is particular as to soil. Taking the gardens as they stand through the kingdom, I will venture to affirm, that not more than one-third will be found suitable to the Quince without some extra preparation. I may here observe, that it is only a matter of common sense to suppose that the soil must be congenial to the stock, whatever kind is grafted or budded on it: this is surely obvious enough.

As far as my experience goes with the Quince stocks (and I have had my eye on them for the last forty years at least), they love a moist soil. But, lest I be misunderstood, let me qualify this remark, which might otherwise assume unnecessary proportions. I mean moist above, not below—not a wet subsoil. I have known them thrive to admiration on very coarse, clayey loam within four miles of the metropolis; and this soil, I may remark, was also springy beneath.

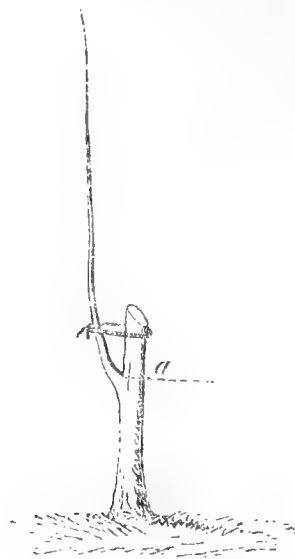
At the foot of Putney Hill, in my laddish days, lived Mr. Leader, the eminent distiller, of Battersea, parent, if I mistake not, of the Mr. Leader once M.P. and friend of Lord Brougham. Who has this seat now I know not; but in the slip adjoining the garden were some six or eight Quince-trees, with boles of nearly half a yard in circumference, and a corresponding amount of head. These used to bear splendid crops of Quinces, frequently as large as a full-sized kitchen Apple, and as yellow as gold; for the summers of those days, which used to ripen Tomatoes growing in the open ground like Potatoes, did ample justice to the Quince. As a youth I was open to temptation on the fruit question, and have more than once filled my pinafore under the before-named trees. Now, this soil, adjoining the nursery where I was reared, I was, of course, intimately acquainted with, and many a battle I have had with its stubbornness. But we are told that our continental neighbours succeed well with it on sandy, dark soils; surely such must have the power of retaining much moisture.

I may now proceed to speak of the stocks as to their culture. I may first observe, that some of our best growers double work their very choice or delicate Pears, first by putting a free-growing kind on the Quince, and afterwards the delicate kind on the same: this is generally performed by budding.

The Pear stocks are to be obtained in quantities from the stock-growing nurseries. They are rather coarse-looking in growth; the Quince stocks of a smooth character in the stem. The latter are easily obtained by any one possessing an old Quince stump or bush: they have such a tendency to root upward, that, by burying the stem six or eight inches in depth, plenty of rooted suckers will be obtained in a year or so. The stocks are planted in proper soil, and pruned as recommended for the Peach stocks, the bottom of the stem being cleared of all spray, in order to furnish an easy chance of introducing the bud or graft. If planted in November, and the stocks are as thick as the little finger, they may be fit to bud in the July following (this, however, depends on freedom of growth); or they may possibly be ready to graft the following March.

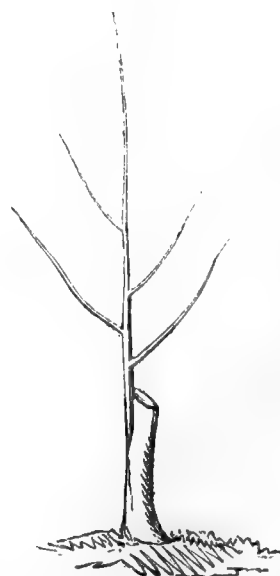
About grafting and budding, more when we have run through the fruits. I may now speak of the budded or

grafted stock; the former first, as it may come soonest to hand. The band of the bud may be loosened about six weeks after the bud is inserted, and in the following pruning season the head of the stock must be cut off; and, as in the case of the Peach, amateurs may leave about six inches to tie the growing bud to. By the end of this summer the budded stock may be expected to appear as follows:—



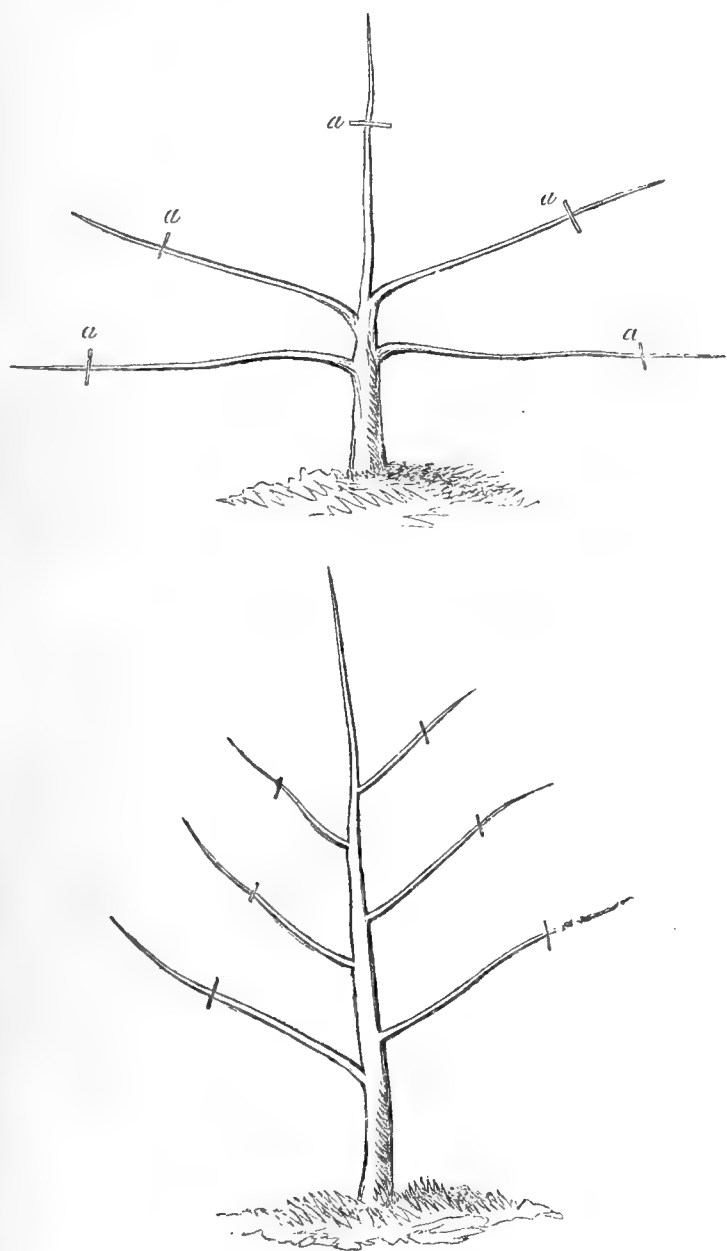
The letter *a* denotes the point at which the knife must be exercised at the pruning period, the portion above that line being the mere stump of the stock, which I before advised to be left to tie the bud to. This is not a mere matter of convenience alone, but the proceeding may be justified on principle, and in this way:—We all know that the healing power in trees decreases with age and weakened energies, and, *vice versa*, that plants or trees in general, with a good flow of sap, the sooner recover from wounds, &c. The young stock, then, by the end of the second year, has obtained a more powerful root action, and is in a better position to cicatrise the wound which must be caused in the act of “snagging,” which is the term usually applied by practical men in cutting away the superfluous bit of stump left in the process of budding or grafting. This stump, then, must be pruned neatly and closely.

The grafting season for Pears is March, just before the buds commence swelling. In grafting by the whip or ordinary mode the head of the stock is cut completely away, and, of course, there is a very small amount of snag to remove at the ensuing pruning season. The following sketch will represent tolerably well the character of the budded and grafted Pears at this period:—



It now becomes the proprietor, before applying the

pruning knife, to determine as to what form he wishes the tree ultimately to assume. If for any mode of training against a wall or trellis, he had better cut the shoot down to within about nine or ten inches of its junction with the stock; but if for a pyramid it may be shortened only a few inches—just as much pruned away as appears immature. If the grafted Pear possesses side shoots, as shown in the sketch, and which is sometimes the case, about four inches of these may be left at pruning time. During another summer these will become nice young trees, and fit for transplanting; that for training against a wall or trellis having several shoots on each side; that for a pyramid the same, with a nice central leading shoot in addition. They will be nearly as follows:—



The cross marks show where the winter's pruning may take place.

The trees may now go to their final destination if requisite, or they may remain another year or two if desirable. In the ensuing summer they will, to use a gardening phrase, "make a deal of wood;" and as pruning is still an important affair, I must beg to say a little about it for the sake of young beginners.

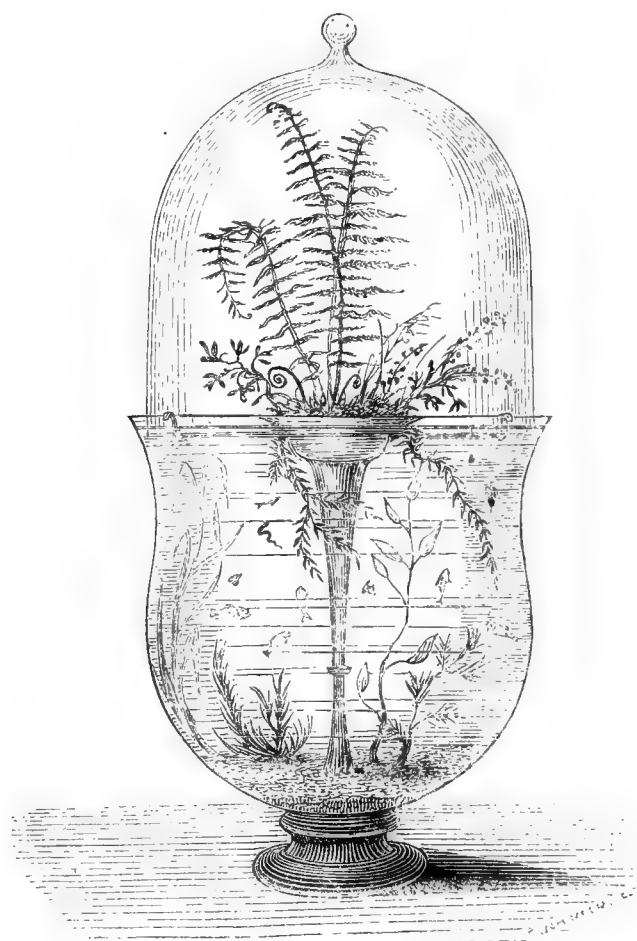
The whole business with the pyramidal tree is to take care that the branches are regularly developed as the leading shoot proceeds upwards; and to accomplish this the latter must be shortened less or more annually, in order to produce the desired effect. The whole, when complete, must be pyramidal; and the branches as they proceed must be occasionally shortened to that end, and also to cause them to develop spurs, or the rudiments

of them. Such a tree, when complete, may be from six to nine feet in height, according to the fancy of the cultivator; and the lower tier of branches may extend from two to four feet, according to the object in view, tapering to a point at the top. It will be observed that I have marked the pruning point of the central shoot of the wall Pear by the letter *a*, and this with a view to produce a liberal amount of shoots for the ensuing year's choice, when the tree will be nearly full: the requisite number of shoots to form future branches will be produced, or nearly so.

Pears are trained in a variety of ways, as all know; and, of course, the future form and character of the tree must be, in some degree, given during what may be called the nursery management. To go through every form, and to offer sketches of them, would be to make a book. From what has been here stated with regard to the pyramidal and fan modes of training, our readers will readily be able, with some slight modifications, to carry out their views as to any mode of training, bearing in mind that an ample production of young shoots to select from must be obtained whilst the tree is young, by shortening back, or, as I have termed it before, by nursery shoots.

R. ERRINGTON.

FERNERY AQUARIUM.



PROCURE two propagating glasses, the one ten inches and the other nine inches in diameter. Invert the larger on a stand of turned wood or a saucer of sand. Cut three pieces of zinc of an **S** shape, and hang them over the edge of the glass, the bottom of which must be covered to a depth of two inches with well-washed river-sand. Fill with water, and introduce the weeds and fish.

A thin flower-glass standing in the sand forms a support for a saucer of Ferns. Cover with the smaller bell-glass, its edges resting in the zinc supports. A very amusing and instructive ornament is thus completed at a cost of five shillings.—E. A. COPLAND, *Bellevue*.

PROTECTING STRAW HIVES.

ONE or two remarks having lately appeared in THE COTTAGE GARDENER as to the best mode of protecting straw hives during winter, I am induced to communicate the following account of the means I employ. I should mention, however, that I seldom use hives of the common form, unless I happen to purchase one containing a stock.

The objects to be gained in protecting hives appear to me to be twofold—the exclusion of wet, and the preservation of a *uniform, moderate* temperature. In a natural state bees inhabit hollow trees, the thick sides of which afford a much greater protection against external cold and daily variations of temperature than our comparatively thin-sided straw or wooden hives. The material, then, that would be most desirable to employ as a protecting agent would be one perfectly impervious to wet, and a non-conductor of heat. The substance which I have found fulfil these conditions in the highest degree is a compound of Indian-rubber and ground cork, which is prepared for flooring rooms and passages instead of oil-cloth. The mode in which it may be employed with cylindrical hives is to cut a strip seven to nine inches wide, according to the height of the hive, and four feet long; this is placed round the hive, and prevented from unrolling by a piece of string; a milk-pan placed upside down completes the protection. If the entrance into the hive has been made by cutting the straw (a plan which I regard as inferior in every respect to having the entrance cut out of the floor-board), it will be necessary to make a corresponding entrance in the covering.

I have found that the hives protected in this way have, during the late extreme and rapid alternations of wet and cold, been preserved perfectly free from dampness. This I partly attribute to the fact that the covering has preserved them, to so great a degree, from the external cold, that no condensation of the moisture exhaling from the bees has taken place. I may mention that this substance is termed *Kamptulicon*, and is sold at a warehouse in Walbrook. That which I have employed has been taken up after some years' use, and answers equally well with new.—W. B. TEGETMEIER.

NEW AND RARE PLANTS.

LEPERIZA LATIFOLIA (*Broad-leaved Leperiza*).

This South American bulb is found in moist, wooded places in the province of Tarma, Andes of Peru. It has also been called *Chrysiphiala latifolia* and *Pancratium latifolium*. Its flowers are golden yellow. In a greenhouse they open in September.—(*Bot. Mag. t. 4952.*)

CASTANEA CHRYSOPHYLLA (*Golden-leaved Chestnut*).

"One of the greatest rarities, perhaps, in the arboretum of the Royal Gardens of Kew." The golden colour of the under-side of the leaves arises from numerous scales of that colour. The tree was discovered in 1830 by Mr. D. Douglas, on hills about the grand rapids of the Columbia, and near Mount Hood. It has since been found in California. It is perfectly hardy.—(*Ibid. t. 4953.*)

TRICYRTIS PILOSA (*Hairy Tricyrtis*).

This is a native of the Himalaya. Flowers greenish yellow, and striking from their form and crimson spots.—(*Ibid. t. 4955.*)

LINUM GRANDIFLORUM (*Large-flowered Flax*).

This annual is the "Red-flowered Flax," about which so many inquiries have been made in our pages. Those who wish to know what the flower is when in perfection should purchase this month's number of the *Botanical Magazine*. "Nothing," says Sir W. Hooper, "but a well-coloured figure, which has never hitherto appeared, can give an idea of the beauty of this plant." Its flowers are brilliant crimson, and about one inch and a half in diameter. It is a native of Northern Africa, near Mascar and Oran. Kept in a cool greenhouse it flowers in August.—(*Ibid. t. 4956.*)

MELASTOMA DENTICULATUM (*Toothed Melastoma*).

A handsome stove evergreen, native of New Caledonia. Flowers white, tinged at the edge with pink. Blooms in July and August.—(*Ibid. t. 4957.*)

KEEP A GARDEN DIARY.

Now that the days are shortening, the bustle of the leaves pretty well over, the winter's stock properly secured, and out-door work not so pressing as it has been, we can take a little breathing time, and review the past in connection with our preparations for the future. But how can we review the past? Have we stored away in our memories all our failures and mishaps since March last? Can we bring to mind the whole of our own arrangement of flowers during the past summer? Can we recollect all our contemplated alterations? Do we remember the advice given on the various subjects of inquiry, arrangement of flowers in borders in particular? the subjects treated of, and the suggestions offered, in THE COTTAGE GARDENER bearing on our own individual interests during the present year, which is now drawing to a close? I think not. I know individually, if I had to depend on memory alone, my improvements would be on a very limited scale.

Therefore, when I say we have time to review the past, with me that review consists in looking over my daily journal for things generally, and a note-book alphabetically arranged for things in particular. Now, these notes are of vast service to me at this season of the year, when new flower-beds are being made, the old ones altered, and the flowers re-arranged; for here it appears as though the whole of the flowers had been mixed together, and sowed broadcast, and the same flowers in every bed that was large enough to hold them. I say, how could I make any satisfactory arrangement if, when reading THE COTTAGE GARDENER, I had not noted down what appeared applicable to me here? How much better it is to arrange a border sitting in a warm room during an evening, so that on the morrow there is no need of standing in the cold to consider what shall be put here, or what shall be there. I do consider, before I touch a border to fork it, I should have the whole arrangement complete, either mentally or on paper; and to do so a man must make himself acquainted with every flower and shrub that he has on the premises or at his disposal.

Some men of my class may think the above a difficult point to attain without years of experience; but it is not so difficult as they may imagine. This I know from experience, for when I engaged with the Doctor I had all to learn; but the past has told me what perseverance would do, and those in my circumstances must not only work, but think; and to make that thinking of the utmost service it must be booked, or the heads of it, for a future, as well as for the present day. This is very well known to the great body of your intelligent readers; yet there is a large class of readers, at least of men that should be readers, who do not know it; for circumstances have come to my knowledge of late of individuals giving up THE COTTAGE GARDENER because they did not profit sufficiently by reading it; but further particulars of *this* some other day.

Now, the man that reads only for the present day, and has no faith in reading to develope and cultivate the mind, so that when called upon he may be able to grapple with and overcome obstacles difficult and perplexing—such a man is not likely to be very much interested in Mr. Errington's charred materials, or Mr. Robson's deep trenching, or to follow Mr. Beaton in his run-and-read style through his long papers, with note-book before him, jotting down all that is likely to be of any service to him in his present position; and he must be in an enviable position, indeed, if he did not meet with a good deal that would be worth jotting down.

No, the man that will throw away these winter evenings, and neglect the cultivation and improvement of his own mind, is not very likely to make great exertions, beyond what are compulsory, in the cultivation or improvement of the place under his care.

Some people may say, "This reading and writing so much, what good is it?" It has been said to me often, and yet the objectors have been glad to avail themselves of it when memory has failed them in reference to the past.

In gardening matters it is this good—you can refer to the past, and see how it corresponds with the present, and, from the experience thus gained, the course for the future can be the more easily shaped out. For instance, one like myself has a large place under his care, and he wishes to make every improvement he can, both for his own and his employer's advantage. How long would it take him to get

acquainted with the shrubs and flowers there, to arrange them so as to keep up a well-distributed bloom throughout the season? Too long, I fear, to be of advantage to either, even if he was a reading man, and depended on that and his practical experience alone; for shrubs and flowers come into bloom at different times on different soils, and I find on the same soil position or aspect will make a fortnight difference. Therefore I adopted the following plan:—

On the 1st of January, 1856, I entered in a book what shrubs and flowers were then in bloom, distinguishing those that had received a little assistance in bottom-heat. For each month, dividing the month into *b, m, e*, I carried a small memorandum-book in my waistcoat pocket, and as the blooms came out I entered the dates in it, and copied them off into the regular book when convenient.

By thus doing, on looking over my list, I can ascertain the correct names (thanks to your kindness), with the time of their blooming here, of 163 shrubs and flowers, exclusive of Roses. With this list before me I can very easily make my arrangements to my satisfaction.—THE DOCTOR'S BOY.

GLASS LABELS.

We have recently received from C. Pemberton Carter, Esq., of Kennington Hall, near Ashford, in Kent, some labels or tallies made of glass, for sticking into the soil after having the name of the plant inscribed upon them by means of a diamond pencil. The dark colour of the soil acts as a background, rendering the inscription very legible even at a distance, and the legibility would be still further increased if the back of the glass were painted black. They are made of plate glass three-sixteenths of an inch thick, are six inches long, and one inch and three-eighths wide; but, of course, they can be made of any other size desired. It must be a large stone, and thrown against it with great force, that would break this kind of label; and it has this great merit—it is invisible from a distance, getting rid of the eyesore occasioned by numerous opaque or light-coloured tallies. A country glazier offers them at sixpence per dozen.

GOLD FISH—THEIR HABITS AND AILMENTS.

FINDING from your correspondent "Z. Z. Z.," and "A YOUNG GARDENER," that some information is wanted about Gold Fish, I think that perhaps some little experience which I have had in them may be useful. I would first remark that the three varieties of the tribe *Cyprinus* which are so common—the Carp (*C. carpio*), the Prussian Carp (*C. gibelio*), and the Gold Fish (*C. auratus*), resemble one another very much in form and habits. They all thrive best in one kind of situation—they all bite at one class of baits. In general form they are similar. The cunning of the Carp is proverbial. In Sir W. Jardine's *Naturalist's Library* we find Mr. Yarrell says of the *C. gibelio*, "Though known to be very numerous in some situations, little success attends the angler who endeavours to catch them, as they seldom bite freely." As to the Gold Fish, "With rod and line they are rarely easy to take; the drum-net takes very few; with the drag-net they are as difficult to take as the Carp, going to the bottom, close to the sides, and over the top of the net if possible. You cannot drive them into a trammel-net even if you hit them with a stick. They will, with a net close at hand, sometimes come so near to the side, and so obstinately keep their position, that you may easily catch them with your hand."

With regard to the attacks of which "Z. Z. Z." speaks, and the chasings mentioned by "A Young Gardener," I agree with the latter in attributing it to spawning; but whether it is through *jealousy* of the males is a matter for consideration. It is remarked by Izaak Walton (*Complete Angler*, chap. ix.) "that they (Carps) might breed, he had, as the rule is, put in three melters for one spawner." Also, in another part, as a quotation from Janus Dubravius, "Then three or four Carps will follow one female; and that then she, putting on a seeming coyness, they force her through weeds and flags, where she lets fall her eggs, or spawn, which sticks fast to the weeds, and then they let fall their melt upon it."

My own observation of Gold Fish points to a similar conclusion, particularly as I think your correspondents will remark that the position of the fish is always the same, viz., the pursuers, or males, to be alongside the females, a little higher up and a little further back, which one would imagine to be the most suitable for this natural office, and not to indicate warlike attack. Further, I have seen no case where the attacked (?) was not running away, which would not be likely to be always the case in warfare. As to the cannibalism spoken of, fish in general are admitted to be the most voracious of created beings, and it is quite possible that when pressed for food they may so satisfy their hunger; but I do not think such are the natural habits of the Gold Fish any more than of the Carp; but, though some deaths may occur from such a cause, there are other very frequent causes of mortality. The Gold Fish are very subject to deformities and diseases of various kinds. As to deformities Badham, in his *Ancient and Modern Fish Tattle*, remarks, "Not a few labour under various personal defects, such as lame fins and goggle eyes, or else have the mouth, and sometimes the whole body, screwed to one side;" to which I may add, that I have frequently caught them entirely without a dorsal fin, with the caudal fin not only bifid, but trifid and quadrifid, and once with the anal fin entirely absent.

With regard to diseases the last-mentioned author speaks as follows of the *C. carpio*: "He is subject to a mossy efflorescence above, and to small pox beneath, the scales; to worms and internal ulcerations of the liver; to visceral obstruction, from feeding too freely on chickweed; to malignant pustules and sympathetic carbuncles; to a *morbus pedicularis*; to a slimy exudation from the eyes, ending in blindness;" and, according to M. Comte Achard, "à une fièvre épidémique, contagieuse, inflammatoire et gangréneuse!" Whether the Gold Fish has all these malignant tendencies I cannot say, but I have no doubt that some of these are causes of mortality, having observed some of them, and I think, whatever disease the Carp may have, the Gold Fish is likely to be subject to. Certain it is that even in the most favourable situations many die from disease.

As to food I believe the most favourite diet with the Gold Fish is the same as with the Carp—vegetables. Badham says of the Carp that "he is a great lover of vegetables, and that salad leaves and salad seeds constitute his favourite fare, upon which he fattens quicker than upon any other aliment." I have found grass-seeds in the stomachs of Gold Fish which I have opened. They eat the leaves of the yellow and of the white water-lily, and any other vegetable, I think, that comes in their way. In manufacturers' reservoirs I imagine their chief food to be a green, slimy vegetable (?) substance, which is deposited by the water after having been used for condensing. Should there be any further information wished, if able, I shall be glad to give it.—PISCATOR.

[Many thanks.—ED. C. G.]

QUERIES AND ANSWERS.

ARRANGEMENT OF A VINERY.

"I am not exactly in the position of the good-natured Sheffield filesmith, but I am often in a fix. I have pulled down an ugly-looking flue at the back of my little Vinery, and am taking one up the back walk, having excavated the entire, which gives me a border three feet and a half wide, to the depth of one yard from the surface, and am filling it with a compost in the proportion of four small loads of sound turf, two of rotten stable manure, and one of mortar dressings. Shall I add any bone dust? In it I propose to grow one or two Vines on the back wall, and, perhaps, a Peach and a Nectarine—too many by half, possibly; but I have plenty of plants, and I can cut them away. Of Vines I have strong plants of Black Hamburgh; Chaptal, akin to Muscadine, with shouldered bunches; a Muscat and purple Constantia. These latter I should like; will they do? Not if one of your contributors is right in confining me to Hamburgh or Muscadine. There will be eighteen inches of depth of soil under the flue passing in the necessary slope from the wall, which I hope to be able to keep moist enough. Now, for the covering to the walk, it will have a rise of six

inches in its passage. How am I to prevent it being too hot to pass along upon? I propose to fill up the angle, having raised the walk by the fixing of wooden staves on bricks, inclosing air passages along each side, for the purpose of husbanding and managing the heat, with broken bricks. Had I better leave crevices between the staves the whole or part of the way, or, having no staves at all, inclose with a solid brick flooring? The latter would be more pleasant, and capable of being kept cleaner; but shall I have heat enough? My requirements are a greenhouse Vinery, making the flowers give way to the fruit, and forcing moderately, say a month before the natural start of the Grape out of doors.—AMATEUR."

[So far as we understand your plan we think it will answer well. Your compost had better be four loads of sound turf, one load of manure, one of lime-rubbish, and a barrow-load of broken bones, not bone dust. You may grow any of what you propose against the back wall, provided you give light enough, by not covering the roof of glass too thickly with leaves. Your Vines on the roof ought at least to be four feet apart. On the back wall the *Muscat* should have the warmest end. We are cutting *Muscats* now in a house where there are Peaches, or rather, were in summer. An open-sparred wooden pathway would be as good as any over your flue. By making it wide enough you might have an opening on each side of the flue, and the flooring might either rest on the ground or on bricks placed along to receive it. We presume this is merely your return flue, and in that case the top of the flue might form part of the back path by being covered with thick tiles or bricks. The last would be the neatest, and the heat you put in must rise.]

GROWING CARROT-SEED.

"R. G. C. will be obliged by information respecting the cultivation of Carrot-seed, when the Carrots should be planted, how deep, and also as to their future cultivation."

[Carrots for seed ought to be sown about the middle of July in beds. By November some take them up, and cut the foliage to within two inches of the crown, then store them away in straw-covered heaps for the winter, while others cover over the beds with litter during the winter to keep off the severe frost. Towards the end of February the land has been got in order; the Carrots are then brought, and either dibbled in, or by the spade, and by some with the plough. Each root is a foot apart in the row, and three feet row from row, planted nearly level with the surface. The land is kept clean. The crown or first heads of seed are always ripe first, and must be gathered over at least three times during the ripening of the seed. It is from time to time put into a stack; then all thrashed out together. Old large Carrots are never planted for seed, as some suppose: they would be expensive to plant, they would break down in the summer, &c. In a gentleman's garden, or in a small way, the thing could be done; then the stems could be *staked* and tied up. We are favoured with the above particulars by an excellent authority, who also observes, that even in a good season not more than seventy per cent. of Carrot-seeds are good, whilst of that grown this year not more than 40 per cent. will be fertile.]

CONES OF PICEA NOBILIS.

"I suppose I am the person Mr. Bradley's question in THE COTTAGE GARDENER refers to respecting *Picea nobilis* cones. In answer to that question, I gathered our cones the latter end of September, as they began to show a disposition to open. Northampton Flower Show was at hand, so I took a pair of them there, thinking they would attract some notice; but this did not appear to be the case, the Judges passing them over unnoticed. There was, however, a keen-eyed nurseryman who caught sight of them, and he, knowing the value of such things, offered me four pounds for the pair. Not being willing to sell them until I had ascertained whether they were good or bad, I opened them, and I inclose a portion of the seed for your inspection. I am afraid you will come to the same conclusion as I have, that they are good for nought. I would just say that our

tree was loaded with male blossoms at the time when the young cones appeared.

"I shall be obliged to your correspondent if he will state how he succeeded with his cones.—GEO. ARCHER, *Gardener to W. M. Dolbin, Esq., Finedon Hall, Northamptonshire.*"

[We fear that the seeds are not fertilised. We have opened several, but have found no cotyledon. The best test will be to sow them in a cold frame next March.—ED. C. G.]

EVERGREEN UNDERWOOD FOR PLANTATIONS.

"A PRACTICAL RECTOR,' in answer to 'A NEW SUBSCRIBER AND COUNTRY VICAR,' writes as follows:—

"You, of course, want immediate shelter for yourself, regardless of prosperity, as your predecessor did. He planted trees that answered his purpose, regardless of leaving you the naked trunks. You will get no good by planting *anything* among your drawn-up trees; but they are of sorts that, if cut down within a foot of the ground, will all shoot up readily from the bottom, and make a thick copse in two years' time. Cut them *all* down; do not leave *one*; screw up your courage, and do not let any timid neighbour dissuade you. Plant among them, when cut down, *quantities* of evergreen Privet, strong plants; do not spare for numbers; put them in every available place; they will grow up among the trees, and form together an impenetrable copse. Also, stir up all the ground with the spade after having sown it broadcast with hips, that is, seed of the evergreen Brier or Dog Rose. Altogether, these will form a perfect screen and impenetrable fence, and last for ever, being cut down about every twenty years.

"Even if Mr. Ferguson's plan of Silver Firs would succeed, which I doubt, and have no faith at all in, or the ruinous advice of the Editor, they are both so expensive as to deter any one only having a life interest in the property. My plan costs *nil*—the trees cut down pay all expenses."

[We do not at all approve of this; a narrow strip of copse by the road-side is as poor an apology for a "cover" as a bank of Raspberries; but the advice to plant large Privet and to sow the seed of Dog Roses is very good, and may be followed out with much better success if the trees are not cut down; and if the trees, or any of them, are cut down, let it be quite close to the surface of the ground. You would ruin them in ten years by cutting them so high as a foot from the ground. With that exception the mode is very good for converting a plantation into a copse, and after that a tolerable plantation of trees could be got up from the stools; but what would be the gain, seeing there are more than enough of trees already? Copse may pay better than many trees in some situations, but a narrow slip of copse is the worst of ideas for giving a good effect to the entrance to either a cottage or a castle.]

TIME FOR MOVING HARDY HEATHS.

"I have a bed of Heaths; they are in bad soil, and I want to lift them and renew the bed with better soil. When will be the best time to do it?—THE DOCTOR'S BOY."

[Hardy Heaths are like "American plants," or like *Rhododendrons*, and such kinds; their roots are so numerous, and they get such a hold on the soil, that you cannot get them up without a large mass or ball to each plant. Now, all plants with that habit may be taken up quite safely at any time of the year; but spring and autumn are the best seasons. As your Heaths are not very prosperous, shake off as much of the soil from their roots as you can, and plant them rather deeper than they were before.]

CERASTIUM TOMENTOSUM AS AN EDGING.

"One of your correspondents recommends *Cerastium tomentosum* as a valuable edging plant. Can you tell me its familiar name, and whether it comes from seed? Also, what treatment is needful in winter for the *Ozothamnus*? Should it be cut down? I have two plants of *Andromeda floribunda* that have not flowered for the last two seasons. What is the cause? They appear very healthy.—A SUBSCRIBER OF FIVE YEARS."

[The proper name of *Cerastium tomentosum* is *Cerastium tomentosum*, and the English names take *tomentosum* first, which means a short white down on the leaves, which makes them appear woolly. Mouse-ear Chickweed is the English for *Cerastium*, and the two make a pretty long string—the *Woolly-leaved Mouse-ear Chickweed*. We are not aware that it comes from seed; but it creeps so fast that the treatment needed is to keep it within bounds. After it is made into an edging, and fills up the line, you will have to cut that line on both sides to keep it neat, and every third year, at the furthest, you ought to take it up and divide it, and plant it afresh as you would do Daisies; but it is much harder than double Daisies. The flowers are not the beauty, but the white woolly leaves and the close manner of growing; but the flowers are pretty white stars while they last. The real familiar name is Common *Cerastium*; but it is so old that the present generation knew nothing about it till it was brought out as an edging plant at the Crystal Palace.]

There are two or three kinds of *Ozothamnus*, and one of them is hardy enough to live out of doors, and to be cut down to the ground before winter; the rest require to be kept from frost in some way or other. Your *Andromedas* are too healthy, perhaps, for no plant flowers more freely and regularly in any soil that will grow a *Rhododendron*. Lift it next March, and the check will make it bloom probably.]

WARDIAN CASES.

"What is the best form, and what the cost of a handsome Wardian Case?—GENEROUSUS."

[These are very indefinite queries. Show a plan to some cabinet-maker or ironmonger, accordingly as you determine upon a frame of wood or of metal, and ask them for an estimate. Whoever you employ, be sure to have the Wardian case without a bottom. It can then be placed like a hand-light over such boxes of plants as Mr. Beaton describes to-day as being grown by Mr. Veitch ready for such a purpose. The edges of the tin or zinc box (galvanized iron would be a better material) could be hidden with moss when the Wardian case was placed over it, and this case could be taken off occasionally to examine or to re-arrange the plants.]

SMALL BULBS OF *LILIUM LANCIFOLIUM*.— *LOBELIA ERINUS COMPACTA*.

"What am I to do with the small bulbs that have accumulated round the bases of the stems of *Lilium lancifolium*? They are in pots. I raised from seeds, last spring, a large potful of *Lobelia erinus compacta*, which was put out in little patches, and half a dozen of these patches have been taken up again and put in pots. It is not a bad imitation of *Ramosoides*, but not so dark. I want to know if I shall be able to make anything of it for edgings next season, and how?—ANTI BELLIS."

[The little bulbs of *Lilium lancifolium* might be planted out of the pots next May into a warm, sheltered place near a south wall, to be watered occasionally, and to be taken up next autumn, saved like Potatoes, potted in February, and planted out again in May, and so on, till every one of them is a bigger bulb than the one it came from. But you may grow them in pots if you prefer it, and keep them all the time with the old ones, and on the same plan. It is a thousand to one if ever anybody will succeed in getting one more plant of *Lobelia erinus compacta* from seed. It is a chance variation from a normal type which will not come true from seed. Almost all the seed houses advertised seeds of *Lobelia ramosoides* as lately as last year, although it was well known that the plant never seeds at all. It is a great chance if ever you have seen the very plant of which you think you possess a stock. We could never seed either the blue or the white *Compacta*; but that is no reason why the plants should not seed. We know that not a single variety of the family comes true from seed, and the variety *Compacta* is less likely to come true than any of them, providing it does seed, which we very much doubt. Set your seedling plants to work by the end of February, and you may have ever so many of them from cuttings, which will make edging plants in time for next summer; but if they are really as

dwarf as *Compacta*, put three of them in 60-sized pots, and let each pot represent one plant only.]

TO CORRESPONDENTS.

A *Subscriber* and J. H. W. are referred to Mr. Fish's communication published in the present number.

FATTENING PIGS (*Novice*).—They will not fatten on Carrots and Mangold Wurtzel only. They must have barleymeal also. We should boil the roots, slice them, and mix them with the meal.

PORTABLE MANURE (*An Amateur in Lancashire*).—Guano, pigeons' dung, and superphosphate of lime, sprinkled two or three times annually during wet weather, would be the best applications to your herbage on the poor, steep land. We know of no animal that will willingly eat the leaves of the Elder.

NAMES OF PLANTS (*A. M. S.*).—Your berry is from the Woody Nightshade, *Solanum dulcamara*. (*Doctor's Boy*).—We cannot make out your plants from the small seeds of one, and piece of seed-pod of the other. Send us a flowering specimen when you have one.

PINUS PALLASIANA AND PINUS RADIATA (*G. W. E.*).—*Pinus Pallasiana*, a native of the Crimea, is quite a different tree from *P. radiata*, introduced from California since Don died, and, therefore, could not have been named by him. *Taurica* and *Tatarica* are common garden names for *Pallasiana*, which, with *radiata*, may be had of Messrs. Low, Veitch, and Glendinning; also in other nurseries.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

CREWE. February 3rd and 4th, 1857. *Secs.* S. Sheppard and D. Margelts, Esqs. Entries close January 15th.
CRYSTAL PALACE. January 10th, 12th, 13th, and 14th. Grand Exhibition of Poultry, Pigeons, and Rabbits. Secretary to the Poultry Exhibition, William Houghton, Esq., Crystal Palace. Entries close December 13th.
ESSEX. At Colchester, December 31st, 1856, and 1st, 2nd, and 3rd of January, 1857. *Secs.*, G. E. Attwood and W. A. Warwick. Entries close December 17th.
KENDAL. At Kendal, February 6th and 7th, 1857. *Sec.* Mr. T. Atkinson.
LIVERPOOL. January 28th, 29th, and 30th, 1857. *Secs.* Gilbert W. Moss, Esq., and William C. Worrall, Esq., 6, Lower Castle-street. Entries close on the 10th of January.
NOTTINGHAM CENTRAL POULTRY ASSOCIATION. January 13, 14, and 15. *Hon. Sec.* Frank Bottom. *Secretary to the Canary Department*, Jno. Hetherington, jun., Sneinton.
PRESTON AND NORTH LANCASHIRE. January 21st and 22nd, 1857. *Sec.*, Ralph Leigh, Esq., 125, Church Street, Preston. Entries close December 13th.
SOUTH EAST HANTS. At Fareham, January 26th and 27th, 1857. *Sec.* Mr. James James. Entries close January 14th.
N.B.—Secretaries will oblige us by sending early copies of their lists.

SPANGLED HAMBURGHES.

GLAD am I to see that Hamburgs are now beginning to rise in general estimation. For the last three or four weeks, as "W. H." says, "it really is quite refreshing" to see the remarks in your paper concerning these fowls; but, at the same time, I was astonished to observe so good a judge of Hamburgs as "W. H." denouncing them as bad winter layers.

My experience tells me that with a fair run and proper treatment they will lay almost as early and as well as Cochins, for I have hatched them in June, and had them laying in the early part of December. "But then," some say, "their eggs are so small." So they are; but mind, Hamburgs do not eat more than half what an equal number of Cochins would; but I confess they want better food.

Then, again, they do not tease you with wanting to sit all the summer, but continue laying till August or September, or at least till they begin to moult, which I generally find is in the latter month, after which they will again commence their task, but always later the second year. Hence the necessity of rearing a number of *early pullets* to lay during November and December, when eggs are dearest.

I believe Spangled Hamburgs to be the most beautiful and useful of any class of domestic poultry. Some say they cannot be kept in confinement, but I have proved they can—not to the same extent as Cochins, perhaps, because they must be kept thoroughly clean, or roup will surely visit you; and I am afraid it is persons who do not like the trouble of this who are so partial to Cochins. There are many, I know, who keep Cochins well, and keep them because they are really fond of them; but I still think, were they to keep Spangled or Pencilled Hamburgs for twelve months, they would no longer want any Cochins.

Mine are in runs (cock and six hens to each) eighteen feet square, with fences or bushes of common Blackthorn six or seven feet high, and galvanized wire netting all round the bottom to prevent their getting through. They are on gravel, which is swept over every morning, and the gravel cleaned out and fresh put in every week. By this means they are always in high condition, and lay almost all the year round.

Allow me to thank "W. H." for his many excellent articles on these fowls, as, also, many others—Mr. Tegetmeier and his "Spangled pets" not forgotten.—E. B., *Oxford*.

A CLASS AT EXHIBITIONS FOR SINGLE COCK PIGEONS.

I THINK at Poultry Shows there ought to be a Class (and I have no doubt it would be a class that would pay as well as any) for single Carrier and Pouter Cock Pigeons, the same as for the single cocks of fowls. I will give you my reasons for thinking so.

There are a great many fanciers who prefer dun and blue Carriers to black Carriers. Now, if a fancier has a good black cock Carrier, and wants duns or blues, he pairs the black cock to the dun or blue hen. Then, if he wants to exhibit black Carriers, he must unpair them to pair that black cock to a black hen, or they would not be a pair, as a pair at a Show must be of one colour. If he does separate them for the occasion, and shows a cock with a hen that he is not regularly paired to, that cock would either fight and kill her, or make her so that she would never be fit to show again. There was a case of that description at the recent Birmingham Show. A friend of mine, Mr. Corker, of Queen-street, Cheapside, London, showed white Carriers. The cock nearly killed the hen. I asked Mr. Corker if they were not paired together, and he said they were not. I did not ask him the reason why they were not paired, but I have no doubt it was because he had the cock paired to a light silver hen, which hen was better than his whites—whites generally not being so good as silver, or blues and duns, and when he wanted to show the whites as a pair they would not take to one another. The cock would have killed the hen had not Mr. Corker been there, and had the hen taken out and put into another pen.

If there was a class for single birds it would give the fancy an opportunity of showing them separately, and not at all interfere with their breeding them to their fancy; and I think, if it was once suggested, it would be taken up and adopted. Many more reasons might be given why there should be a class of that description.

If there had been such a class at Nottingham in January I should have entered one myself, as I have a black cock paired to a dun hen, and will not separate them to show him with a black hen.—JOSEPH DEAKIN, 114, *Green Lane, Sheffield*.

PITY THE SORROWS OF AN EXHIBITION FOWL.

MR. EDITOR,—Oh! pray do "hear me for my cause," although only a poor Cochin cock; my troubles and anxieties bear very heavily upon me, and are sometimes scarcely endurable. Still I believe my owner really considers me the most tenderly managed of poultry, and pets me accordingly; whilst, in return, two of the most comely-looking of my wives and myself have secured for him a whole sideboard of Silver Cups, that are glittering at the opposite end of the room at this very moment. But I fancy mine is decidedly the worst side of the bargain, and even though "got up" for the purposes of poultry triumph by excessive feeding, the kindest of attention, and at times a position beside my owner's fireside (in a new wicker basket, made for my express accommodation), none could believe the trials I have to undergo to carry out the anticipations of my self-satisfied benefactor. I am now just recovering my moult, and, to facilitate the movement, the chimney-corner is considered, by my master, the best possible appliance, and it is thus I overheard the fact that

THE COTTAGE GARDENER is open to all poultry, and that their troubles (real or imaginary) were always fairly discussed without favour or affection to any one if honestly represented. Then do grant permission to an experienced Exhibition Cochin to tell his own ungarnished troubles.

As I hinted before, my success hitherto has been an almost uninterrupted run of good luck, so far as master's triumphs are considered; and, to gain this end, thousands of miles have I travelled in all weathers, exposed to the diversity of "receptions" that have everywhere awaited me, with no small amount in the aggregate of compulsory imprisonment into the bargain, and those who now visit master complain, "the old cock begins to look fady." It is truth, too; I myself begin to *feel* fady likewise, and the causes that make me so I must feebly expose. Even to-night a real host of acquaintances have been calling almost incessantly to discuss the probability of my future position, as I hear a great number of Poultry Shows are contemplated, and a very shiver comes over my whole frame when I find, by their conversation, that I am compelled, against my will, to be present throughout every one where the offer of plate prizes tempts the cupidity of my owner.

Even had this sad news not affected my rest, another circumstance has still more positively prohibited even its most distant approach, for more than a dozen times I have been pulled out of the basket for closer examination, and opinions as diverse as possible have been ventured, whilst the fumes of tobacco have added seriously to my indisposition; but I find the general result is, I *must* go, right or wrong—"never venture never win;" and so I will tell you briefly that I have to stand the hardships of seven competitions in the space of nine weeks, and I am expected to look equally well at the conclusion of this trying ordeal as heretofore. It is no use, I feel I cannot do it; the very anticipation of such a combination of afflictions forces me to regret I am everywhere considered "a beauty," and to deplore I was not hatched a homely-looking barn-door fowl, with the liberty of independence, whilst violent and sudden death by the hands of the cook would be merciful treatment compared to the inflictions now in store for me. *Here* I have increased warmth artificially applied; in a few days I shall be breathing an atmosphere below freezing. My present diet is replete with stimulants in golore, hot toast and ale, ready-cooked meat, and various other delicacies; some few days onwards my sole diet will be indifferent corn, and cold, icy water. Yet those around me say, "the *change* will not hurt me," and that, "like some old woman's eels" (all the gentlemen seem to know her), "I have become habituated to it, and can stand it without a wriggle." But it is useless for me to swagger, who have the trials to undergo; so here comes plump the hard truth, "*I am dying by inches*."

Could you believe it, Mr. Editor? I am to be despatched from home to-morrow, wet or dry, more than two hundred miles, not by a single rail, but by railways; and my admirers are canvassing the fact, that I shall have to remain for two hours at the ——— branch railway-station waiting for the coming train. This is one of the unavoidable vicissitudes of my life; but I hope to get to the end of my journey if not delayed, and to find a comfortable exhibition-pen awaiting me. Still, I have been deceived before (some committees are *always* behindhand), and if so now, I must be content to put my head behind my wing, and stand the cutting blast till morning. It is then I feel how ill-advised dining-room kindnesses, just left behind me, have augmented my present sufferings. The superintending committee each put on an extra top-coat, and take a glass of warm grog "to keep the cold out," *but I get nothing*. The next morning I am at length penned for the Judges' inspection; they say, "I don't look so well as I used to." How can I? But an order has been forwarded *with* me, that I am *not*, after three days' wear and tear, to be sent home again, but, after having patiently endured the whole period a draught almost equal to that of a winnowing machine, I am to be remitted to another similar meeting, to undergo a repetition of the like rack of constitution without any respite whatever! This will last two days. Then I find I *shall* come home for a week, "to be doctored and got well again." I shall then start afresh on my travels till all seven Shows are completed. Can poultry-flesh endure it?

Pray do try, Mr. Editor, and get us all some *little* respite, and plain, natural living for a few weeks between our trials, to recover from temporary hardships, instead of making them all but continuous. One of my wives is now suffering from a dreadful cold; the other has been grossly and wantonly assaulted by a vixen of a competitor "next door;" and, if these errors are to be persisted in, my hopes of seeing my temporary residences bedecked with honourable distinctions are gone for ever.

We Show fowls shall soon be all superannuated and imbecile. I feel my legs get weaker daily, and the Judges must in justice soon give our triumphs to less-favoured, but more robust ones. Then, Sir, what "a jolly row must ensue!" for my short-sighted master will inveigh on "changes of opinion"—"chance work"—"there is no dependence to be placed on Judges now-a-days;" and, if jeered by the successful owner, will even venture to enunciate "humbug." But I cannot help it—it is not any fault of mine; if I had been allowed a few weeks' calm retirement from the fashionable world "*between times*," as Molly says, who generally feeds us, the present troubles and mortifications would not have been heard of, and my poor emaciated, sickly wives might have been blessed with happy increase. I do not pretend, Mr. Editor, to understand the signification of "hard cash," "the needful," and "bank notes," so well as the bank which is needful for me to bask upon freely and unrestricted, and hard corn for my daily sustenance. Give my associates and myself these blessings regularly, or even occasionally, and you will not hear complaints from me; but if not (I have heard the Judges themselves say it at the front of my pen), we must give way, and, the best of us being deceased, our admirers will not feel the desire to inspect the less-favoured, and, therefore, the evil must cure itself by a general bankruptcy of our prison-keepers. As I belong to the most hardy of my tribe, the sufferings of others must be still greater, and it is only, therefore, by well-timed advice at your hands that an alteration is hoped for by—AN OLD COCHIN.

NORTH YORKSHIRE AND DURHAM POULTRY SHOW.

(From a Correspondent.)

THE fourth annual Exhibition of Poultry at Darlington took place on December 4th, in the Central Hall, a building admirably adapted for the purpose, being roomy, and having a fire-place on each side, in which was kept a roaring fire, both day and night, to the great comfort of the fowls.

Notwithstanding the superior attractions of Birmingham, this Show far surpassed any of its predecessors in number of pens exhibited, last year the number of pens being 398, and this year 475. But not only in numbers, but in quality did it excel its forerunners. The *Game*, as a class, were quite undeniable, and in *Dorkings* there was great improvement—a fact which was made manifest, even to the tyro, by comparing the Silver Cup birds of last year (a truly good pen), with the winners on the present occasion. The whole class of *old Dorkings*, however, received the high commendations of the Judges.

There were some excellent pens of *Gold* and *Silver-laced Bantams*. *Cochins* were few in number, and not remarkable for excellence. *Ducks* plentiful and good, and *Geese* far above the average.

I heard numerous complaints, from both spectators and exhibitors, of the *darkness* of the room, which precluded the possibility of seeing some of the lower pens at all. This was, in a great measure, to be attributed to the snow lying on the skylight; but even under the most favourable circumstances I cannot help thinking that the lower tier of pens would be too low to show their inmates to advantage. The arrangements were, however, on the whole, most satisfactory, and, in many respects, I saw great improvement on those of last year, especially in the size of the pens appropriated to *Geese* and *Turkeys*, and all praise and thanks are due to Mr. Hodgson, the zealous and very obliging Secretary.—G. B.

SPANISH.—First, SILVER CUP, Mr. Shorthose. Second, Mr. Wm. Newsome, Heckmondwike. *Chickens of 1856.*—First, Mr. Daniel Wilson, Sutton Fields, Crosshills, Keighley. Second, Mr. Wm. New-

some, Heckmondwike. Highly Commended.—Mr. Wm. Lightfoot, Shieldfield, Newcastle.

COLOURED DORKING.—First, Jno. Robinson, Esq., Vale House, Garstang. Second, Edward Ackroyd, Esq., Denton Park, Otley. (The whole class highly commended.) *Chickens of 1856.*—First, SILVER CUP, John Robinson, Esq., Vale House, Garstang. Second, Mr. Alfred Watkins, Walkley, Sheffield. Highly Commended.—John Robinson, Esq.

WHITE DORKING.—Second, Edward Pease, jun., Esq., Southend, Darlington. (First prize not awarded, there being only two exhibitors.) *Chickens of 1856.*—First and Second, Mr. James Robinson, Darlington.

COCHIN-CHINA (Cinnamon and Buff).—First, Henry Marshall, Esq., Durham. Second, Edward Ackroyd, Esq., Denton Park, Otley. *Chickens of 1856.*—First, Mr. Joseph Teale Sigston, Welburn, Castle Howard. Second, John Robinson, Esq., Vale House, Garstang.

COCHIN-CHINA (Brown and Partridge).—First, Mr. John Bell, Thirsk. Second, Mr. Thomas Bridges, Croydon, Surrey. *Chickens of 1856.*—First, Mr. John Bell, Thirsk. Second, Mr. James Dixon, Bradford.

COCHIN-CHINA (White).—There being only one exhibitor, no prize was awarded. *Chickens of 1856.*—First, Mr. Alfred Watkins, Walkley, Sheffield. Second, Mr. C. R. Titterton, Birmingham.

GAME (Blacks, Black-breasted and other Reds, and Brassy-winged).—First, SILVER CUP, Mr. E. Wright Legram, Horton, Bradford. Second, J. B. Booth, Esq., Killerby, Catterick. *Chickens of 1856.*—First, Mr. Charles Gofton, Barnard Castle. Second, Mrs. H. Sharp, Mill Lane, Bradford.

GAME (Duckwings, Greys, and Blues).—First, Mr. James Dixon, Bradford. Second, Mr. Daniel Leeming, Little Blackwood House, Halifax. *Chickens of 1856.*—First, Mr. William Newsome, Heckmondwike. Second, Mrs. H. Sharp, Mill Lane, Bradford.

GAME (Whites and Piles).—First, Mr. E. Wright Legram, Horton, Bradford. Second, Mr. Daniel Leeming, Little Blackwood House, Halifax. *Chickens of 1856.*—First, Rev. T. E. Abraham, Bickerstaffe, Lancashire. Second, Mr. E. Wright Legram, Horton, Bradford.

GOLDEN-PENCILLED HAMBURGH.—First, Mr. Mackie, Darlington. Second, Mr. William Horner, Newsham, Thirsk. *Chickens of 1856.*—First, Mrs. H. Sharp, Mill Lane, Bradford. Second, Mr. John Crabtree, Shipley, near Bradford. Highly Commended.—Mr. William Horner, Newsham, Thirsk.

SILVER-PENCILLED HAMBURGH.—First, Mrs. H. Sharp, Mill Lane, Bradford. Second, Mr. James Dixon, Bradford. *Chickens of 1856.*—First, E. Featherstonhaugh, Esq., the Hermitage, Chester-le-Street. Second, Mr. D. Wilson, Sutton Fields, Crosshills, Keighley.

GOLDEN-SPANGLED HAMBURGH.—First, Mr. James Dixon, Bradford. Second, Rev. J. C. Raw, Ainderby Vicarage. *Chickens of 1856.*—First, Mr. James Dixon, Bradford. Second, Rev. J. C. Raw, Ainderby Vicarage. Highly Commended.—Miss M. Grey Smith. Mr. Cleminson.

SILVER-SPANGLED HAMBURGH.—First, Mr. D. Wilson, Sutton Fields, Crosshills, Keighley. Second, Mr. James Dixon, Bradford. *Chickens of 1856.*—First, Mr. Daniel Leeming, Little Blackwood House, Halifax. Second, Mr. James Robinson, Darlington.

POLISH (Black with White Crests).—First, Mr. William Newsome, Heckmondwike. Second, E. Featherstonhaugh, Esq., the Hermitage, Chester-le-Street.

POLISH (Golden).—Second, Mr. James Dixon, Bradford. (First prize not awarded, there being no competition.)

POLISH (Silver).—First, Miss Cannan, Bradford. Second, Edmund Backhouse, Esq., Middleton Lodge.

POLISH CHICKENS OF 1856 (any variety).—First, Mr. James Dixon, Bradford. Second, Messrs. Bird and Beldon, Eccleshill Moor, Bradford.

ANY OTHER PURE AND DISTINCT BREED.—First, Mr. Barnard, Darlington. (White Spanish.) Second, William Dawson, Esq., Hopton Mirfield. (Serai Taook or Sultan's Fowls.)

CROSS BREEDS.—First, Mr. Richard Pape, Darlington. (Cross between Brahma Pootra and Dorking.) Second, Mr. Rawling, Barnard Castle. (Cross between Golden-spangled Hamburg hen and Sebright Bantam.)

GOLD-LACED BANTAMS.—Mr. William Mais, jun., East Cowton.

SILVER-LACED BANTAMS.—Mr. William Newsome, Heckmondwike.

WHITE BANTAMS.—George Baillie, jun., Esq., Mellerstain, Kelso.

BLACK BANTAMS.—Mrs. Pulleine, Crakehall, Bedale.

BANTAMS (any other variety).—Col. Colling, Red Hall, Darlington.

DUCKS (White Aylesbury).—First, Mr. James Dixon, Bradford. Second, Edward Pease, jun., Esq.

DUCKS (Rouen).—First, H. Ambler, Esq., Watkinson Hall, Halifax. Second, Miss Wetherell.

DUCKS (any other variety).—First, Mr. Samuel Burn. (Black East Indian Ducklings.) Second, Mr. William Newsome, Heckmondwike. (Wild.)

GESE ABOVE ONE YEAR OLD.—First, Mrs. Wooler, Berwick, near Yarm. Second, George Baillie, jun., Esq., Mellerstain, Kelso. (Grey Toulouse.) *Goslings of 1856.*—First, H. Ambler, Esq., Watkinson Hall, Halifax. (Grey Toulouse.) Second, Mr. Thomas White.

TURKEYS.—First, Edward Pease, jun., Esq., Southend, Darlington. (Norfolk Bronze-winged.) Second, H. Marshall, Esq., Durham. (Cambridgeshire.) *Poulters of 1856.*—First, Mr. Wetherell, Aldbrough. (Cambridgeshire Grey.) Second, Miss Wetherell.

GUINEA FOWL.—Mr. Daniel Leeming, Little Blackwood House, Halifax.

PIGEONS.—*Carriers.*—George Baillie, jun., Esq., Mellerstain, Kelso. *Tumblers.*—Mr. Edward Barber, Rowington. (Red Mottled Almond.) *Pouters or Croppers.*—Mr. Barber, Rowington. (Yellow Pouters.) *Fan-tails.*—Mr. James Robinson, Haughton-le-Skerne. *Trumpeters.*—George Baillie, jun., Esq. (White.) *Barbs.*—Mr. H. Child, jun., Poplar Cottage, Sherbourne Road, Birmingham. *Jacobins.*—Miss Cannan, Bradford. *Turbits.*—Miss Cannan, Bradford. *Owls.*—Mrs. Pulleine, Crakehall, Bedale. *Dragoons.*—Mr. C. R. Titterton, Birmingham. *Archangels.*—Mrs. Pulleine, Crakehall, Bedale. *Runts.*—Mr. Thomas Bridges, Croydon, Surrey. (Silver Runts.) *Nuns.*—George Baillie, jun., Esq., Mellerstain, Kelso.

NOTTINGHAMSHIRE POULTRY EXHIBITION.

THIS was held at Southwell, on the 17th and 18th instant. The following were the prizes awarded by the Judge, E. Hewitt, Esq., Eden Cottage, Sparkbrook, Birmingham. J. R. Rodbard, Esq., obtained the Silver Cup for the best general collection.

SPANISH.—First, J. R. Rodbard, Esq., Aldwick Court, Langford, Bristol. Second, Mrs. Parkinson, Knapthorpe, Notts. *Chickens of 1856.*—First and Second, J. R. Rodbard, Esq., Aldwick Court, Langford, Bristol. Highly Commended.—Mrs. Parkinson, Knapthorpe, Notts. Commended.—Mr. T. B. Stead, Leeds. (A very good class.)

DORKING (White).—Mr. S. Burn, 1, East Terrace, Whitby. *Chickens of 1856.*—Mr. Camm, Farnsfield, Notts. Commended.—Mrs. Howitt, Farnsfield, Notts.

DORKING (Coloured).—First, Mrs. Parkinson, Knapthorpe, Notts. Second, H. C. Stenton, Esq., Southwell, Notts. Highly Commended.—Mr. Bradwell, Southwell, Notts. Commended.—Mr. S. Burn, 1, East Terrace, Whitby. Mr. R. Hawksley, Jun., Southwell, Notts. A. W. Warrand, Esq., Westhorpe, Notts. Major Warrand, Westhorpe, Notts. (An exceedingly good class.) *Chickens of 1856.*—First, Mr. R. Swift, Southwell, Notts. Second, Mr. A. Watkin, Walkley, Sheffield. Highly Commended.—A. W. Warrand, Esq., Westhorpe, Notts. Mr. G. Kirkland, Southwell, Notts. H. Bromley, Esq., Stoke Hall, Notts. Commended.—Mrs. Parkinson, Knapthorpe, Notts. Mr. G. Kirkland, Southwell, Notts. Mrs. Stenton, Southwell, Notts. (An extremely well-represented class.)

COCHIN-CHINA (Cinnamon and Buff).—First, Mr. Bradwell, Southwell, Notts. Second, Mr. Staley, North Collingham, Notts. *Chickens of 1856.*—First and Second, Mr. Staley, North Collingham, Notts. Highly Commended.—Mr. W. Dawson, Hopton-Mirfield, Yorkshire.

COCHIN-CHINA (Brown and Partridge).—First, C. Calvert, Esq., Southwell, Notts. Second, Mr. Bradwell, Notts. *Chickens of 1856.*—First, J. R. Rodbard, Esq., Aldwick Court, Langford, Bristol. Second, Mr. Bradwell, Southwell, Notts. (The Partridge classes were very good.)

COCHIN-CHINA (White).—First, Mr. Staley, North Collingham, Notts. Second, J. R. Rodbard, Esq., Aldwick Court, Langford, Bristol. *Chickens of 1856.*—First, Mr. A. Watkin, Walkley, Sheffield. Second, Mr. W. Harvey, Change Street, Sheffield. Highly Commended.—Mr. V. Wilkinson, Southwell, Notts. Commended.—Mr. J. Smith, Walkley, Sheffield. (A superior class.)

GAME FOWL (Black-breasted and other Reds).—First, Mr. C. Chal-loner, Steeley, Worksop. Second, J. R. Rodbard, Esq., Aldwick Court, Langford, Bristol. (Brown Red.) Highly Commended.—Mr. Field, Oxtun, Notts. Mr. H. Marshall, Cotgrave, Notts. Mr. R. Swift, Southwell, Notts. Commended.—Mr. Doncaster, Maplebeck, Notts. (A most extraordinarily good class.) *Chickens of 1856.*—First, G. Neville, Esq., Stutton, Newark. Second, Mr. W. H. Swann, Farnsfield, Notts. Highly Commended.—Mr. H. Marshall, Cotgrave, Notts. Mr. C. Chal-loner, Steeley, Worksop. Commended.—Mr. Doncaster, Maplebeck, Notts. Mr. E. H. Strange, Amptill, Beds. Mr. R. Perry, Kirklington, Notts. J. R. Rodbard, Esq., Aldwick Court, Langford, Bristol. (This Game class was one of the best ever seen.)

GAME (Duckwings and other Greys and Blues).—First, Mr. Doncaster, Maplebeck, Notts. (Duckwings.) Second, J. R. Rodbard, Esq., Aldwick Court, Langford, Bristol. (Duckwings.) Highly Commended.—H. D. Bayley, Esq., Ickwell House, Biggleswade, Beds. (Silver Duckwings.) Commended.—Mr. C. Chal-loner, Steeley, Worksop. (Duckwings.) (This class excellent.) *Chickens of 1856.*—First, J. R. Rodbard, Esq., Aldwick Court, Langford, Bristol. (Grey.) Second, Mr. Doncaster, Maplebeck, Notts. Highly Commended.—Mr. J. H. Bradwell, Southwell, Notts. Commended.—Mr. R. Swift, Southwell, Notts.

GAME (White and Piles).—First and Second, Mr. Camm, Farnsfield, Notts. Highly Commended.—Mr. T. Bomford, Norwell, Notts. (A very good class.) *Chickens of 1856.*—First and Second, Mr. Camm, Farnsfield, Notts. Commended.—Mr. E. H. Strange, Amptill, Beds.

GOLDEN-SPANGLED HAMBURGS.—Mr. W. H. Swann, Farnsfield, Notts. *Chickens of 1856.*—Mr. W. H. Swann, Farnsfield, Notts. Very Highly Commended.—Mr. Daft, Halloughton, Southwell, Notts.

SILVER-SPANGLED HAMBURGS.—Mr. H. Dixon, Farnsfield, Notts. (An indifferent class.) *Chickens of 1856.*—Mr. Daft, Halloughton, Southwell, Notts. Commended.—Mr. Solomon Nicholson, South Collingham, Notts.

GOLDEN-PENCILLED HAMBURGS.—Mrs. Parkinson, Knapthorpe, Notts. Very Highly Commended.—Mr. Daft, Halloughton, Southwell, Notts. *Chickens of 1856.*—Mr. R. Swift, Southwell, Notts. Very Highly Commended.—Mr. Daft, Halloughton, Southwell, Notts. Highly Commended.—Mr. H. Marshall, Cotgrave, Notts. (A truly excellent class.)

SILVER-PENCILLED HAMBURGS.—Mrs. Parkinson, Knapthorpe, Notts. Very Highly Commended.—H. D. Bayley, Esq., Ickwell House, Biggleswade, Beds. *Chickens of 1856.*—Mr. E. Cope, Greaves Lane, Edingley, Notts.

POLAND FOWL (any colour).—Prize withheld. *Chickens of 1856.*—Rev. S. R. Hole, Cauntun Manor, Notts.

ANY OTHER DISTINCT BREED.—First, H. D. Bayley, Esq., Ickwell

House, Biggleswade, Beds. (Malay.) Second, Mr. W. Dawson, Hopton-Mirfield, Yorkshire. (Sultans.)

BANTAMS (Gold-laced).—H. D. Bayley, Esq., Ickwell House, Biggleswade, Beds.

BANTAMS (Silver-laced).—H. D. Bayley, Esq., Ickwell House, Biggleswade, Beds. Commended.—Mr. Bradwell, Southwell, Notts.

BANTAMS (Black).—Mr. R. Hawksley, jun., Southwell, Notts.

BANTAMS (White or any other variety).—H. D. Bayley, Esq., Ickwell House, Biggleswade, Beds. (Black-breasted Red.) Very Highly Commended.—Rev. T. C. Cane, Brackenhurst, Southwell, Notts. (Muffled.)

GEESE.—Mr. Daft, Halloughton, Southwell, Notts. Very Highly Commended.—H. Bromley, Esq., Stoke Hall, Notts. Highly Commended.—J. R. Rodbard, Esq., Aldwick Court, Langford, Bristol. (Brown.)

DUCKS (White Aylesbury).—J. R. Rodbard, Esq., Aldwick Court, Langford, Bristol. Very Highly Commended.—Mr. Camm, Farnsfield, Notts. Commended.—Mrs. Cheadle, Dunham-on-Trent, Newark. H. Bromley, Esq., Stoke Hall, Notts.

DUCKS (Rouen).—Mr. Daft, Halloughton, Southwell, Notts. Very Highly Commended.—Mrs. Parkinson, Knapthorpe, Notts. Highly Commended.—Mr. Daft, Halloughton, Southwell, Notts.

DUCKS (any other variety).—Mr. Daft, Halloughton, Southwell, Notts. (Nottinghamshire.) Highly Commended.—Mr. S. Burn, 1, East Terrace, Whitby. (Black East Indian.) Commended.—G. Neville, Esq., Stutton, Newark. (Buenos Ayres.)

TURKEYS.—J. R. Rodbard, Esq., Aldwick Court, Langford, Bristol. (Cambridgeshire.) Very Highly Commended.—Mr. Daft, Halloughton, Southwell, Notts. (Cambridgeshire.) Highly Commended.—Mr. H. Marriott, Boundary Farm, Blidworth, Notts. (Cambridgeshire.) *Birds of 1856.*—Mr. Daft, Halloughton, Southwell, Notts. (Cambridgeshire.) Very Highly Commended.—H. Bromley, Esq., Stoke Hall, Notts.

OUR LETTER BOX.

THE UNPAID ANERLEY PRIZES.—"I have at last, by means of a lawyer's letter, fished out from Mr. Wells that there was no Anerley Committee. He at the same time adds, that a Mr. Jewell, of Bermondsey, got the whole matter up. I, however, still think that Mr. Wells is liable as agent, and intend to try the matter in the County Court. I hope others will do the same, and expose to the utmost of their power such disgraceful and disreputable proceedings.—C. E. C."

[We shall be much obliged by a report of the trial.—Ed. C. G.]

ANERLEY POULTRY SHOW.—As my name is mentioned in the last number, in a paragraph concerning this Show, permit me to state that my sole connection with it consisted in having been engaged, at the same time and in the same manner as the Judges, to superintend the birds during the Exhibition. As I understand that legal proceedings are now being instituted against the promoters, I refrain from any further statement until such time as they may be decided.—W. B. TEGETMEIER.

PROTRACTED MOULTING.—"I have a valuable Cochin hen that commenced moulting six weeks since, but, strange to say, for the last five weeks has not lost a feather. She has become very poor and dull, and refuses to eat. Yesterday I administered a dose of jalap, and drew the old feathers from her tail, and this morning I gave her a small pod of Cayenne pepper, and drew a few feathers from her body. I thought of continuing to pull the old feathers, a few daily, to assist nature. Is this right? or can you suggest any better treatment? I think she is upwards of three years old. I think there is nothing wrong in the treatment my fowls receive, as the whole of them, with this exception, are in perfect health. My poultry-house is warm and dry, the run very extensive, and soil peculiarly light, the food chiefly barleymeal, Indian meal, potatoes, and occasionally a little mixed grain.—J. W."

[When a fowl is arrested in the moult to the extent indicated in "J. W.'s" letter, it usually arises from serious internal disease, which prevents the due amount of nutriment being devoted to the growing feathers. I have just lost a Polish hen that had been nearly two months moulting, and, on examination after death, I found an internal tumour, of which there was no evidence during life. In obscure cases I usually give two or three doses of calomel, say one grain each, followed by jalap, and support strength by a diet of soft food, and sometimes a little meat.—W. B. T.]

SUBSCRIBER TO THE COTTAGE GARDENER.—Your questions will involve a long answer, which shall be given as soon as the press of Poultry Shows will allow.

POULTRY JUDGES (Game Cock).—From personal observation we are quite satisfied with the Birmingham decisions. We have fought the battle you would fight, but if you do so in our pages you must mention names and sign your own to your communications.

DILAPIDATED FOWLS (A Subscriber).—The loss of a sickle feather in one bird, and the other having the small feathers cut off from the side of its comb, renders exhibiting them for a prize useless.

IS WATER ESSENTIAL FOR DUCKS?—PLUMAGE OF A SPANGLED HAMBURGH COCK.—"Can you inform me, through the medium of your paper, if Aylesbury Ducks' eggs are likely to become prolific when the birds are confined and debarred the use of water for swimming? I also wish to know if a Silver-spangled Hamburg cockerel is worth keeping with a very white plumage, but still possessing perfect spangles, both in tail feathers and breast, and with perfectly white ear-lobes.—AMICUS GALLI."

[It is quite possible the eggs should be good, though the ducks are entirely shut out from water; but, knowing that a washing-tub sunk in the earth will afford them all the water they require, it is a pity not to give it to the breeding stock. There is then more certainty of the eggs being good. Fattening ducks are better without water. The good qualities of your Spangled Hamburg are so essential to success, that, although his light plumage may debar him from competition, yet we should in your place breed from him with hens darkish, especially about the hackle.]

WEEKLY CALENDAR.

D M	D W	DECEMBER 30, 1856—JANU- ARY 5, 1857.	WEATHER NEAR LONDON IN 1855.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
30	TU	The Winter Tortrix.	30.264—30.106	49—27	W.	—	9 a. 8	57 a. 3	7 26	3	8 1	365
31	W	Silvester.	30.220—30.035	46—29	S.	—	9	58	8 51	4	3 30	366
1	TH	CIRCUMCISION.	29.827—29.793	46—39	S.	—	8	iv	10 a 15	5	3 58	1
2	F	Primrose (Primula).	29.659—29.517	50—36	S.E.	01	8	0	11 40	6	4 26	2
3	S	Snowdrop (Galanthus).	29.611—29.531	49—39	S.	04	8	2	morn.	7	4 54	3
4	SUN	2 SUNDAY AFTER CHRISTMAS.	29.647—29.600	47—40	S.E.	07	8	3	1 4	8	5 21	4
5	M	Mezereon (Daphne).	29.520—29.421	49—43	S.E.	11	8	4	2 30	9	5 48	5

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 42.6°, and 31.4°, respectively. The greatest heat, 56°, occurred on the 30th, in 1832; and the lowest cold, 4°, on the 2nd, in 1854. During the period 121 days were fine, and on 75 rain fell.

POLYPO'DIUM PHEGO'PTERIS.



THIS species, by some botanists, has been included in the following genera—*Gymnocarpium*, *Lastræa*, and *Polystichum*. In every instance, however, they retained the specific name, *phegopteris*, singularly inapplicable as it is; for *phegos*, a Birch-tree, and *pteris*, literally, the Beech Fern, has no reference either to its shape or to its haunts, for it is more rarely found in woods than on mountains. In English it is known as the *Pale Mountain Polypody*, *Mountain Polypody*, and *Sun*

Fern, names referring to the high and fully-exposed-to-the-light situations in which it delights.

Its root is dark-coloured, thread-shaped, wavy, widely-creeping, scaly, and slightly hairy, emitting fibrous rootlets in tufts wherever fronds are produced from it. Fronds scattered, erect, five to eighteen inches high, sharp-pointed, spear-head shaped, delicate-textured, covered with small hairs. Stem brittle, pale, slender, sometimes rather scaly, more than half its length unleafleted. Leaflets sharp-pointed, opposite, the two lowest separated widely from those above them, bent forward, and rather hanging down. Most of the leaflets are deeply cut into numerous broad segments. Each segment is blunt, wavy, somewhat scalloped; sometimes, however, entire, covered with fine hairs, and often fringed. The uppermost leaflets composing the sharp point of the frond are entire, and without segments. The mid-vein of each segment is wavy, and more hairy than the other parts of the leaflet. The hairs in various parts are often in tufts, or starry. The side-veins are alternate, usually unbranched, and bearing at their upper end, near the margin of the segment, a mass of fructification. Each vein does not bear a mass, therefore the row is broken. Each mass is naked, circular, very small, and pale yellowish-brown.

It is chiefly found in the clefts of rocks in moist, mountainous situations, sometimes on open, stony moors, and still more rarely in woods, but, wherever found, the soil abounds with moisture.

In *England* it has been found on rocks above Langley Ford, at the foot of the Cheviot Hills; at Cawsey Dean, Durham; about Keswick, Cumberland; at Egerton Moss, near Bolton, Belle Hag, near Sheffield, at Settle and Wensley Dale, Yorkshire; at Prestwich Clough and Boghart Clough, Lancashire; at Norwood, Surrey; near Brentford, Middlesex; at Lidford Fall and Beckey Fall, Dartmoor, Devonshire; and in the Isle of Man.

In *Wales*, near Llanberris, in the first and second fields towards Snowdon; Capel Curig, North Wales; and in Caernarvonshire.

In *Scotland*, on the Grampians, in Aberdeenshire; on Red Caird Hill, west of Inverness-shire; in Forfarshire, Sutherland, Dumbarton, and other parts of the Highlands; in Moray and Ross-shire; on Ben Lomond; at Ruberslaw and Jedburgh; and at Campsie, near Glasgow.

In *Ireland*, on the right hand of Powerscourt Waterfall; at Waterfall above Lough Eske, in Donegal; and in

other parts of northern counties.—(*Francis' Analysis of British Ferns.*)

This Fern was not known as a British plant when Ray published, in 1670, his *Catalogus Plantarum Angliæ*; but it is included by Morrison and Bobart in their *Historia Plantarum Oxoniensis*, published in 1680, and Bobart states that it had been found in the northern parts of England by Mr. T. Lawson and Mr. D. Lhwyd (Lloyd). In those parts it had also been observed by Dr. James Sherard. Dillenius mentions it, in 1724, in the third edition of Ray's *Synopsis Methodica Stirpium Britannicarum*, as "*Filix minor Britannica pediculo pallidiore, alis inferioribus deorsum spectantibus.*" (The smaller British Fern, with paler stem, and lower wings looking downwards.)

The *Polypodium phegopteris* is a free-growing and very pretty species. Under favourable circumstances it will not fail to repay the cultivator. It is remarkably well adapted for cultivating upon the shaded and most moist parts of a Fernery or rockery. Such a situation must be secured for it, it being particularly partial to an abundant and constant supply of water about its roots, and also as often as possible overhead, during the growing season. A situation on the Fernery, where it might be partially overshadowed by some projecting portion of the rockwork, would be suitable; but, although it delights in a situation like this, yet it must be well drained, so that the mould about its roots does not become soddened and water-logged, for stagnant water throws the plant into a sickly state, and finally deprives it of life.

Having chosen or constructed a suitable place for it, proceed to drain as directed for the last species, using a moderately thick layer of sphagnum moss, or the roughest parts of the peat, to be pressed firmly together; upon that may be placed a few lumps of sandstone, if at hand, or porous stone of any kind. Room to be allowed for five or six inches of the following compost:—Fibry peat three parts, loam one part, and leaf-mould one part, with a free admixture of silver sand. The Fern to be planted firmly in it, so that the main root is barely below the surface, when a few pieces of finely-broken stone strewed about the surface will help to keep the soil open. This operation is best done early in the spring. When all is finished, a liberal watering may be given, and the whole left a few days to settle. Just enough water to keep the soil moist will be sufficient until the young fronds begin to unfold, when a more liberal supply must be given, and continued until the winter is approaching, when water must be withheld, and the soil only kept slightly moist through that season.

For pot culture the same compost may be used, well draining the pots, or deep pans, which are, perhaps, better, and placing the plants in the same manner as on the rockwork. These must be kept in a close, shady place, and be freely supplied with water, or failure will most surely be the result. This Fern may be very successfully grown in a greenhouse or cool stove, where it may be kept green through the winter, but the pots

should have a slight protection. It is very readily increased by division, which should be done in spring.

THE December Meeting of the ENTOMOLOGICAL SOCIETY was held on the 1st instant, Mr. Westwood, one of the Vice Presidents, being in the Chair. An extensive list of contributions to the Society's library, received since the last Meeting, was read, including the Transactions of the Linnæan and Royal Societies of Lyons, the Natural History Societies of Boston and Philadelphia, the Smithsonian Institute of Washington, the Linnæan Society of London, the Philosophical Society of Liverpool, the Society of Arts, Messrs. Stainton, Guerin, Meneville, Newman, Walker, Lovell, Reeve, &c.

A beautiful series of Lepidopterous insects from Moreton Bay, Australia, collected by Mr. Diggle, was exhibited, containing a number of new species, as well as others bearing a very close resemblance to English insects, if not, indeed, absolutely identical therewith, namely, *Agrotis suffusa*, *Lithoxia pulchella*, and *Sphinx celerio*. One species alluded to, *Bombyx pudibunda*, was remarkable for having a wingless female, as in the case of the common English Vapourer Moths.

Mr. Douglas exhibited specimens of the rare little Moth *Gelechia pauperella*, reared from caterpillars, which fed upon *Inula dysenterica* in August; and it was suggested that these might possibly be the autumn brood of *G. inopella*, which is taken in the summer, being larger than the latter, as was, however, often the case with the two broods of a species, the caterpillars of the summer brood growing more rapidly, and, consequently, taking less food than the autumnal ones, which are slower of growth, and, taking more food, attain a larger size. Other instances of a similar kind were mentioned by different members present; as, for instance, *Geometra illunaria* and *juliaria*, and *G. illustraria* and *delunaria*.

Mr. Augustus Shepherd exhibited a new British species of Noctuidæ belonging to the genus *Agrotis*, allied to *A. cursoria*, taken on an Oak-tree near Carlisle; also, a new species of *Ypsipetes* (belonging to the family Geometridæ), nearly allied to *Y. elutaria*, taken by Mr. Hodgkinson, of Preston.

Mr. Waterhouse exhibited specimens of the Beetle *Aricerus coffea*, a native of India, Africa, and South America, and also a reputed British species which had proved injurious to a quantity of nutmegs. Mr. Douglas also stated that it had injured some cases of mace in the London docks.

Mr. Lubbock made some observations on the various recorded instances of insects produced from fertile eggs deposited by females without any previous impregnation by the male. In such cases recent physiologists had supposed the existence of two different kinds of eggs, the one of the ordinary kind, and the other a kind of internal buds or offsets; and it was suggested that those cases in which young belonging to a single sex had been produced (such as only males by the Queen Bee,

or only females by the Oak-ink Gall) might be the result of this latter mode of development. Numerous instances were mentioned by members present of such remarkable abnormal development, without any male impregnation occurring, in *Fumea nitidella*, *Psyche fusca*, the genus *Talæporia*, in the common garden Tiger Moth, *Arctia Caja*, by Mr. Robinson, and by Mr. Hudson in *Liparis dispar*.

Mr. Westwood directed attention to the excellent series of memoirs on the Lepidoptera of Cyprus, Syria, and Siberia, and also on the generical arrangement of the family Geometridæ, published by M. Lederer in the Vienna Transactions, and also to the valuable descriptions of exotic Coleoptera by M. Perroud, published in the Lyons Transactions.

Mr. Edward Sheppard mentioned to the Meeting that he had recently visited M. Lacordaire, of Liege, and that the fourth volume of his great work upon the genera of Coleoptera was in the press, and would be accompanied by the first portion of the illustrations of the genera of the same order, executed by M. Jules Mignon.

Mr. Armitage exhibited a number of interesting Coleoptera, captured by himself on Mount Olympus and on the shores of the Dardanelles.

Mr. Stainton read some notes on the generic distribution of insects, in which he adopted the views of Mr. Wollaston's recently-published work, that although groups of species ranged themselves round certain types or knots, their limits were not positive and decided, but that the groups became connected at their outskirts by means of a species which partook of the characters of both. An extended discussion ensued upon the subject, in which Mr. Waterhouse denied the existence of such transitional species, which he considered as merely theoretical, and which had no actual occurrence in nature.

DOUBLE WHITE PETUNIA.

I HAVE not heard of any one yet who intends to plant another bed of the Double White Petunia; but they did not give up the idea of succeeding with it at Shrubland Park when I was there at the beginning of September; and if any means can be discovered for making a good bed of it, the discovery will be made there first. It is one of the best of all our soft-wooded plants for a pot in the conservatory, the greenhouse, the show-house, or the front hall, and as such no one seems to grudge the first expense of purchasing it; but its real qualification stands on a much higher level than that of competing as a pot plant. About the end of July I was told that it had crossed with many other kinds of Petunias, and that from this stock we might reasonably expect to see more of the double kinds from which to choose bedders. One learns by degrees not to call "chick" till the egg is hatched in such matters, and, from my not having said who effected these crosses, many people thought I possessed them myself, and some have congratulated me on the fact, which was rather premature. I never crossed a Petunia but one season, when I obtained the *Shrubland Rose*. It was out of the Chronicles of the Experimental Garden that I was able to announce the fact accomplished.

When I had occasion, the other day, to write down to Somerset about the *Collinsia bicolor alba*, I asked Mr. Scott, of the Merriot Nurseries, about the progress of this experiment, he being the informant in the first instance, and he answers by saying, "I am glad to tell you that I have about a thousand of them, all between *Imperialis* and various single sorts. Many of them will be early in bloom, so that by May-day I shall hope to have given pledges to posterity." But I am not reconciled to this admission yet; and now I can see the full force of what Mrs. Jane Forrest says about how "very difficult it is for those who thoroughly understand a subject to write for ignorant persons;" and I might add, "how easy it seems for a clever man to escape Scott free from the questions of persons not quite so ignorant as all that;" for if I were to be crossed this moment I could not tell the kind of Petunia from which a thousand seedlings have been obtained. They were raised "between *Imperialis* and various single sorts;" but if they were between a witch and a warlock I should guess easier how to set about repeating the experiment. "I am also strong in seedling *Fuchsias*," he goes on to say, "having nearly, or, I may say, above a thousand of them also, some of which are now, early in December, from two to three inches high; the produce of such kinds as *Mrs. Storey*, the best white corolla out, *Galanthæflora* and other whites, *Raphael*, *Prince Albert*, *Venus de Medici*, a duck, and last, though greatest and best of all in my opinion, *Wonderful*. Have you seen this? (No.) If not, you certainly must."

LINUM GRANDIFLORUM.

All those who have acted on the advice of Mr. Kinghorn, and lifted their plants from the borders before the frost, will find them now to be as easy to keep as any of the old Calceolarias—*Rugosa* for instance. As soon as I was told of Mr. Kinghorn's plan I had my own plants, only two, taken up and potted. I did not find many roots; but the lifting did not seem to hurt them in the least. The two are in one pot, a 32-sized pot, and they look now just as well as the one I had in a pot all along on the sill of a window facing the south. This plant was not allowed to bloom the whole season. I intended from the first to keep it over the winter if possible, and to strike cuttings from it in the spring, so as to enable me to prove it as a bedder of the first water, or kill it in the attempt. I said that heat was not good for it, and I am of that opinion yet; but others have got it up well enough in a hotbed even as early as February, therefore I must give in on that point; and now I am also aware, or very nearly so, that I must eat my own words for saying that it was not fit for a bed. I am almost sure it will make one of the most beautiful beds that ever was seen; but it must be had from cuttings to do that. Seedlings get too top heavy before they are strong enough on their legs to stand much wind or rain; but a bed of it from cuttings may require to be held up at first, as we do sometimes with weak Petunias and Groundsel, and such-like. Another thing which makes a bed of it dangerous from seeds is, that it does not come true from seeds. One of our correspondents declared he never saw such a milk-and-water concern, and a bunch of seedlings which were sent to the Experimental turned out equally bad, all but three plants. My own three seedlings, out of twenty or twenty-five seeds from a first-rate London house, were splendid flowers, and I had several samples from different parts of the country, but none that were better than my own, except one which was sent by Mr. Scott, the cross-breeder of double Petunias, of whom I inquired the fate of the mother-plants in the letter already alluded to. Here is his answer:—"The *Linum grandiflorum* did not seed well with me, most of the pods being abortive. I ought to have set the flowers with their own pollen, but did not know that it was so

shy till it was too late; but I took up all the plants, as you advised in *THE COTTAGE GARDENER*, and they are now growing away famously, and, I think, will be fine in the spring."

I have not heard how Mr. Kinghorn's *Linums* have done, and I must not bother a nurseryman with letters, for I should soon lose caste if I did, unless the occasion was very pressing indeed.

Any one of my three plants, in the hands of a good propagator, ought to turn out one hundred plants by next planting-out time; and I have seen the day when I should have insisted on the three being multiplied to the extent of one thousand plants in the time; but I am not so fast now. Still, after having had to eat humble-pie and all that sort of thing about it, not forgetting the awful scrape of "not believing one word" of that which a clergyman said about it, surely no one would grudge me a good bed of it next year in the Experimental, and I may say that no one has ever had a fairer promise than I have just now. I had only five pods of seeds on the two plants which were allowed to bloom, and I fear I shall not have five seeds out of them all. Were it not for what Mr. Scott says I should have thought that my plants were only too late to seed, having been from a mid-May sowing. Now, however, I see no reason for trusting to home-grown seeds, or to be at the mercy of the foreign market, as three or four plants can easily be kept in a cold frame over the winter, which would furnish sufficient cuttings for the largest establishment, and with no anxiety about the appearance of inferior flowers among them as at present.

Let a good-sized, well-rooted plant of it be kept in store for the winter, and let it be kept in a cold pit or cool greenhouse, and you may calculate on forty or fifty plants from it in March and April, which will be sufficient till we come to learn more about it.

CONSTRUCTION, COST, AND MANAGEMENT OF A PIT FOR WINTERING BEDDING-PLANTS.

I was requested by "H. C. K.," at page 160, to add anything I thought proper to what he states there about the management of bedding-plants; but he is so thoroughly practical, and, like most of the really practical amateurs, he writes so much better for amateurs than practical gardeners, that I find nothing to add or suggest on points of management. I have said already that his own flower-garden, and his way of planting it (see Vol. XVI., p. 395), were the best lesson on the subject in *THE COTTAGE GARDENER*, and I may now say the same about the routine he has given us for keeping up a stock of bedding-plants. His arrangements are capital, and I have told already that some of the great gardeners follow his plan of putting only one cutting of certain *Geraniums* into a pot—at Hampton Court, and at the Stud House there, to wit. He uses 48-pots, and they only 60's; but by his method he is able to put in his cuttings from the middle to the end of June, while very few gardeners can spare them from their beds for a month or six weeks after that period. On a large scale I am quite satisfied there is no cheaper mode than striking *Geranium*-cuttings in the open air, and if they are in by the end of the first week in August they will make plants large enough for keeping over the winter. Still, if cuttings could be generally spared, the 1st of July would be a better time for them; and I agree that all the variegated, and such as are more dwarf than *Tom Thumb*, would do better in single pots over the winter, providing one could find room for so many pots; but if I could get such cuttings at the beginning of July I should be very loath to put them in pots so early. The chance of making so much more blood, muscle, and bone would outweigh with me the safety of wintering more established plants, as those in pots from the 1st of July must necessarily be.

It is comfortable thus to find the practice of the gardener square so nearly with that of first-rate practical amateurs, and I will now show you how nearly we agree about pits for keeping such plants over the winter. Last October we were pinched for room to winter the stock in the Experimental Garden, and after our plans were nearly settled the stock became suddenly increased to the extent of nearly one thousand *Geraniums* and a few other plants, all the contribution of two individuals, a duke and a private gardener. Seeing, therefore, that another pit must be got up all in a hurry, and so late in the season, we determined at once to have a brick pit, and to have the bricks set in cement. For such low pits, which may be mulched round during frost, four inches thick are just as good as fourteen; therefore, our pit is only a brick thick, and, being laid in cement, we did not require any pillars, nothing but four-inch concrete, a "footing," and four-inch work over. The back wall is three feet six inches high, including the footing; the front is eighteen inches high, and the width inside all but five feet. The ash-pit and fire-place are, as near as possible, like those of "H. C. K.;" also a seven-foot chimney for his nine feet, and in lieu of his brick flue we have three-inch glazed earthen pipes laid nearly level along the front of the pit only. Our length is twenty-five feet six inches, and seven lights three feet six inches wide, and five feet six inches long. We have thus two lights more than "H. C. K." The rest is very nearly as he has them, even including the cinders and fine coal-ashes on the top, but not with a back shelf yet; but we intend to have back shelves exactly as he has them in all our pits. There is a larger pit parallel with the back of the new pit, and three feet from it; but it is of the same length, and the bricklayer's contract included another flue of pipes to heat the back pit from the same fire by turning the pipes across the farthest end of the new pit, then carrying them across underground, and into the front of the back pit. For all this the estimate of the bricklayer was only £8. The estimate for the lights was 7d. per square foot; they are of the very best red deal, and glazed with 16oz. sheet glass, in squares six inches by eight inches, six inches being the distance between the bars. There is a flat piece of stout iron across the centre of each light, to which the bars are fixed; and there are iron handles to the lights at the back. The seven lights cost £3 17s. 6d. The frame or wall plates and rafters cost £3; and a stout frame and lid to cover the fire-place, with an oak post to rest the frame against when open, £1, all having three coats of paint. The last pound might have been spared, but the rest of the "framing ground" being tidy and very complete, we could hardly leave an open fire-place for the sake of saving one pound.

The bill of costs ran thus:—

	£	s.	d.
A pit, 25 ft. 6 in. long, and 5 ft. wide inside	8	0	0
Seven lights, 5 ft. 6 in. by 3 ft. 6 in.	3	17	6
Wall plates and rafters	3	0	0
Frame and lid over fire-place	1	0	0
	<u>15</u>	<u>17</u>	<u>6</u>

or, without the covering of the fire-place, a little more than £2 per light. Now, compare "H. C. K.'s" account with this, and we see he paid too much for his lights, and we paid too much for the framework and rafters. We gave just double the price he gave, although we had only two more lights; but our carpenter is an "old hand" for the place, and when timber was at its highest price in 1855, he put up such another frame and rafter on a pit, which is somewhat larger, by which, he said, he was "out of pocket;" and, although he was held to his contract, it was understood that "it must be made up to him" next time.

The three-inch glazed pipes make a good flue, and quite large enough for that size or a size larger, and for one length of pit they "draw" as well as a flue; but we failed to heat the back pit by a return flue of pipes which were not glazed: the length being over sixty feet to the bottom of the chimney, and the pipes almost level, was too much "power" for the strength of the draught, and the curator, in a fit of economy, "erected" a spare zinc chimney, seven feet high, which was "lying about," and he says it answers so well that he must take out a patent for chimneys for the ends of pipe-flues.

There is an opening at the bottom of the chimney, and another a yard from the fire-place, which yard is a common flue for cleaning out the pipes. Tie a piece of strong twine to the end of a long rod, or so many rods tied together as will reach the extreme end; untie the twine and remove the rod. Now tie a handful of straw to the twine near to the end at which it was introduced, and pull the other end till the "wisp" of straw carries out before it all the soot. There should be one person at each end of the pull, and they should run, or rather, pull the straw backwards and forwards several times, and once a year is enough. If these glazed pipes could be placed on an easy incline the draught would keep them clean. A chimney of three-inch glazed pipes, for a large copper which does constant work, has been in use two doors from me since 1852 without any cleaning, and I have known the first three pipes next to the copper to be nearly red hot many a time without causing a crack or flaw in either pipes or joints: the joints are filled with common cement.

There is only one thing we attend to in managing these pits; the greenhouse and conservatory are different from what you see in gardening books, and that one thing is, *we never make use of sun-heat to warm the air inside during the whole winter*, and those who do otherwise, and shut up their pits and houses in winter early in the afternoon of a sunny day, with a view of less fire that night, and less stress upon the plants in consequence, must have had their philosophy direct from the moon. But we are not upon philosophy to-day, but upon the pits and plants in the Experimental Garden.

D. BEATON.

WINDOW GARDENING FOR THE WINTER.

(Continued from page 199.)

4. WATERING.—The water used in winter should not be lower than 55°, and should be applied in the forenoon from the end of September to the end of April. In summer it is best to apply it in the evening. I can give no answer to the many inquiries as to how often such and such a plant should be watered, farther than just to treat the plant as you do yourself, if you are sagacious enough to drink only when thirsty. The plant may feel this thirstiness once a week or once a fortnight in dull weather, twice a week in bright, mild weather, and three or four times a week when the weather is very bright and frosty, because the dry air from the firing will stimulate a rapid evaporation. Plants in a state of rest, or comparatively so, may require moistening in the course of a month or two. Most succulents can hardly be too dry from November to March. If inclined to shrivel, the stems should be moistened in preference to deluging the roots. When water is given to the soil, let it be in quantity to reach every root, and then wait until the soil becomes dryish again. In windows it is necessary to have the pots in saucers; but the water should not be allowed to stand in them. If the drainage is good, and about an inch in depth, then from one-eighth to one-fourth of an inch of water in the saucer will do no harm in the case of growing and flowering plants; whilst evaporation from

it will tend to moisten the atmosphere about them, the dryness of the air in a warm room always having a tendency to absorb moisture from the stems and leaves. This explains the difficulty a fair friend wishes us to solve. The leaves of her *Geraniums* and *Cinerarias* frequently flag and turn up on the edges even when the soil is moist, and the evil is not lessened when she gives the soil an extra soaking. This appearance takes place chiefly under two conditions in winter.

The first condition is when, after dull weather, a very bright, sunny day comes. From the roots having been in a lethargic state they are not so quickly stimulated into action as the rapid evaporation from the leaf by the influence of the sunbeams would demand. The remedy is not increased soakings at the roots if the soil is moist, but a slight shading or moistening the foliage to lessen evaporation from them. The second condition is when, under a dull sky, there is a black frost, which sucks the moisture from the air as if it was kiln dried, and which is made drier still by the roaring fire in the room to keep the cold out. This dry air absorbs moisture wherever it can find it, greedily sucking it from stems and leaves, from damp soil in the pot, and from every bit of the pot in proportion to its softness and porousness. Extra moisture at the roots in such circumstances does not remove the danger; in fact, a new danger is created, and its strength will be somewhat in proportion to the porousness of the pot in a cold night, as the evaporation, thus stimulated, will produce a degree of cold about the best and youngest roots next to the sides of the pot that may be fatal to them. In such circumstances damping the foliage and setting the plants on damp moss or wadding are much better than any extra saturation at the roots. This is easily done in a greenhouse by means of a syringe; but two young ladies succeeded admirably by different and yet both very simple means. One placed a number of her plants on an old tea-tray, and with a large hair-brush and a peculiar switch of the wrist, having dipped the brush in water, scattered the fine drops over every part just as if they had been dewed. In extreme cases she would do this twice a day. The other, having a large pail of water, placed her fingers over the surface of the pot so as to keep the soil in, and reversed the top of the plant in the water, giving it then a slight shake over the pail, and then setting it down on its saucer in its usual place. Some people will say, "What a fuss and trouble about these trumpery plants!" Well, they are likely to be trumpery without some trouble; but these ladies made no trouble, but a pleasure, in thus attending to their pets; thus antidoting from harm, and cleaning, at the same time, a score or so, sooner than I write one of these periods, and their success was their best reward. This leads us, contrary to our intention just here, to say a few words on

5. CLEANLINESS AND FREEDOM FROM INSECTS.—Just let our young beginners think that every plant is an organised existence, and that its health greatly depends upon its ability to perspire and respire freely through every green leaf and every green bit of bark and stem, and then they will see at once how much they suffer when crusted with dust and the filthy excretions and remains of insects. A humorous young beginner, "J. H. W.," tells us "that since the foggy weather in November his young *Geraniums* and other plants have got *mildewed*, are covered with green fly, and have as dirty an appearance as if they had been kept in a coal-cellar or cinder-hole. Every dirty insect takes its delight amongst them; even the spiders spread out their webs on the branches, as the drapers do their fal-dals in their shop-windows, and I suppose for the same purpose—catching flies, *alias* flats. How am I to use tobacco-water or tobacco-smoke, as washing so many leaves would require more time than I can afford?" Did you

ever seriously try the time? I will try to help you; but, meanwhile, I will take the liberty to give you a piece of advice, which is this:—Preserve your incognito, Mr. J. H. W., if you would not be written down a very Goth by the bulk of your fair sisters, for thus, even by implication, saying anything but the most honeyed words about the drapers' windows, at which so many of them, as well as, I must own to it, your humble servant likewise, have cast fond, if not longing and lingering looks, while we thus regaled upon and appreciated the beautiful. Some of these sisters, with a spice of the old lady's doctrine, which led her complacently to believe that her own troubles were *afflictions* sent for a good purpose, but that the troubles of her neighbours were *judgments* for their shortcomings, would at once say that the dirty plants were quite as good as you deserved. Now, though standing bolt upright for the right of the drapers to display, and for us to admire, their finery, I am charitable enough to believe that you deserve, and sanguine enough to trust you will yet command, success.

The mildew was most likely the result of a foggy, confined atmosphere, while your soil about the roots was but too well supplied with moisture. Dusting the parts over with flowers of sulphur from a dredge or pepper-box is the best remedy, and whilst the sulphur is on the leaves keeping the plants from sunshine for a couple of days; then shake the plants when the leaves are dry, pull the top several times through water at about 60° in a fine day, and place the plants in their usual situation on the stage of a greenhouse, or on the sill of a window, and treat with air and water, &c., as mentioned above, and yet to be mentioned.

As to insects, keep in mind the old proverb, "a stitch in time saves nine." In the case of the green fly the nine might be rendered nine hundred or nine thousand, and yet not be up to the mark. The time to use the antidote is whenever the first insect is seen. If you wait until, by their numbers, they have drawn nearly all the life blood from the plant—and the filth with which they have encrusted its leaves, and thus checked perspiration and respiration, prevents it making more nourishing feeding material—you may rest assured that the question is not easily solved whether it is best to cure or destroy. For such insects tobacco is a sovereign remedy, whether applied in a liquid form or in smoke from smouldering it to ashes. In a liquid state a fair dose will be formed by boiling a quarter of a pound of shag in five gallons of water, and, when settled and cool, dipping the top of the plant into it, taking care, by covering the surface of the soil, that none of the earth drops out. When thus dipped the plants may stand in the shade for a day, and then be drawn through clean water, then any dirty places be rubbed with the fingers so as to loosen the filth, and then be drawn again through the clean water, and set again in their usual places. When there is no necessity for washing, the easiest plan is smoking with tobacco. When all are bad in a greenhouse the whole house may be smoked—it matters not how, provided the tobacco smoulders slowly, and, from being covered with some damp surface, as moss, the smoke is cool. When but a few plants are affected, whether in greenhouse or window, a close box, in which the plants can be placed, will be a great saving in tobacco, as a small pinch will be sufficient; and it is always safer to repeat the dose than to give too much at a time. I have generally used a small garden-pot, so set that there was a free draught of air towards the hole in its bottom, on which were placed some live coal of cinder or charcoal, a piece of dry paper over it, then the tobacco covered with damp moss or hay, and generally this burns out without farther trouble. The different fumigators are neat and useful, and a great recommendation, especially for fumigating in a close box, is, the smoke is always cool, and all you have to do is to

light it, put the nozzle in at a hole, and turn round the handle. I have also used cigarettes thus formed:—A piece of brown paper was steeped in a strong solution of nitre. When the paper was dry, from a quarter to half an ounce of the best and strongest shag was spread over it, and it was then rolled up tightly in cigar form, and then one end being lighted, and the other stuck firmly into anything, it burned slowly until all was consumed. Half an ounce will fill a largish close box strong enough. It may be a prejudice; but I like, for common purposes, the garden-pot as well as any of the best machines. In particular cases we have a round hole made in the side of the pot near the bottom, and at that we can apply the tube of a bellows, and keep out of the smoke, unless we consider being in it a luxury.

Notwithstanding my determination, I find I must write more than once on this subject. R. FISH.

THE WAY OF TRANSGRESSION.

By the Authoress of "My Flowers."

(Continued from page 93.)

READER, have you pondered well upon the subject of my last paper? have you considered the melancholy story of James Anderson? have you laid to heart that love of drink and reckless conduct have already injured his prospects, and want of principle strongly marked his early career? Oh, what an outset in life! what bags in which to lay up our store of happiness and future welfare! The end of such a beginning, without the converting grace of God, must be woe indeed.

For a time all appeared to be going on well; Anderson's habits were more temperate, and his punctuality not to be complained of. But, alas! this was mere surface-work; the heart was unchanged; and, under the guise of great decorum and gentle demeanour, he was carrying on a system of fraud, of which there is too much reason to fear his wife was by no means ignorant. Speculation, whether on a large or small scale, seldom goes long undetected; and it was scarcely to be supposed, that in an establishment where the best mercantile regulations were adopted, systematic robbery, like that carried on by Anderson, should, for any length of time, remain undiscovered. And so it proved; and the kind patron who had taken so much pains to rescue the family from degradation and ruin was, as may be supposed, deeply grieved to find his efforts unavailing. Anderson, with a wife and two children, was again thrown upon the world.

Do you see yonder throng of miserable-looking women, most of them with children in their arms, congregated round the entrance of that wretched court? some in knots of two and three—others gazing up that loathsome-looking alley—many laughing aloud in evident enjoyment of the spectacle—while on the face of a few an expression of mingled sorrow and pity might indeed be traced; while a troop of idle and ragged urchins are pelting with mud and cabbage-stalks a man and woman—the very personification of filth and wretchedness—wallowing in drunkenness and vice—a spectacle too loathsome to be gazed upon with impunity. Now a redoubled laugh is heard, as the reeling woman makes an ineffectual attempt to seize one of her juvenile tormentors; and her husband is prostrated in the kennel, overbalanced by a similar effort to punish a puny foe. This is, indeed, no overdrawn picture of Anderson and his wife, sunk in the depths of degradation. A serious paralytic attack, brought on by continued vice and intemperance, bore the husband to the verge of the grave; but, contrary to all medical expectation, he recovered, with only a peculiar involuntary movement of the head, which, as he walks along, seems as though it was only slightly attached to the body, and gives an odd and almost ludicrous appearance to his tall and blighted figure. They now receive a small weekly allowance from some well-to-do relative, and are existing (it can scarcely be called *living*) up one of those wretched courts to which I have before alluded.

This is so far the history of Anderson and his wife, a

thoroughly well-educated couple, brought up in all the refinements and elegancies of life. Though they had little money, they had many friends, who not only possessed the will, but the power to serve them—a power, too, which they exercised to the utmost, until their patience became exhausted, in endeavouring to assist a couple who refused to help themselves. And so Anderson and his wife continue to drag on a miserable existence upon a small pittance allowed by the parish, and a trifle occasionally given in charity by those who had known them in better days.

I pray my readers, those particularly of the working classes, and all of every class who may have a fondness or inclination towards beer and spirits, to pause and *think* upon the decline and fall of James Anderson and his unfortunate wife. Here is a case before their eyes of superior position, education, and means, of great advantages and bright prospects, all wrecked and ruined by the love of drink. I am convinced and satisfied that of all Satan's arts and devices—of all his deepest and deadliest attacks against the souls of men—not one is so deep, deadly, and desperate as the love of drink. Whenever that horrible taste takes possession of a man his doom is sealed so long as it retains its power, and it is the most difficult task to overcome it. The maddening effects of drink in its mildest form cause such miserable depression of mind and spirits when the time of sickly soberness arrives, that nothing but a return to the draught of poison can restore composure to the wretched victim. And thus Satan hands him alluringly on, with flattering ways and words, until he sinks, stupefied and reckless, into the burning lake. Oh, readers! be warned in time, lest you take no thought till you rise up in eternity! Remember, "drunkenness," and a sin yet more harmless in the eyes of some, viz., "revellings," are of those works of the flesh that *shut us out from "the kingdom of God."* Drink in its very mildest form, beyond satisfying the simple thirst that animal nature experiences, is dangerous and unholy; it is playing with fire, and putting a match to gunpowder. It is tampering with a passion that the Lord hath himself declared prevents our inheriting the kingdom of God.

No man who drinks is either prosperous or happy even in this world. His affairs are *sure* to be turned upside down; they are *sure* to come to ruin; a curse rests upon them and corrodes them. His heart is *sure* to be distracted within him; his spirits are *sure* to be broken, depressed, and melancholy; and his short-lived pleasures, if they can be so called at all, are furious and unsatisfying. Readers, have any of you ever seen, in all your lives, a man given to the mildest estate of drink who ever looked well in the face or happy? or who ever "got on," as it is called, in his worldly business or profession? It will be doing the best service to Satan that ever was done yet if you have. No; where no blessing is, there is no good thing, no success in this life, and no sure hope in the next. Madness, misery, sloth, dirt, sickness, and famine tread on the heels of drink. High-born drunkenness in its effects is rather more covered up from the eye of man than that which is low-born; but in the sight of God all men are equal, and the consequences are in themselves equal too. Oh, dear readers, flee from drink as from a fiery-flying serpent! Fly not to some other object, or pursuit, or amusement; they will do you little good; but fly to Jesus Christ, the Friend of sinners, who will snatch you as a brand from the burning, and strengthen you against every temptation. Fly at once to Him for deliverance, and strength, and happiness, and prosperity, and peace. Remember that *drink* can give you none of these things; but, "at the last, it biteth like a serpent, and stingeth like an adder."

CELERY CULTURE IN AN UNFAVOURABLE SITUATION.

My *locale* is on the north side of the Mendip Hills, and our garden has a declivity to the north. I need not inform my readers that it has a cold aspect. For several years I have been disappointed in growing Celery. On three or four occasions the last planted has not grown at all after having been finally planted out. I last year tried the plan recommended in THE COTTAGE GARDENER, of having beds

of Celery instead of rows, although I had always before planted double rows, and it has more than answered my expectations; but I made a material variation in the method of planting, which I think may possibly be useful to some brother gardener or amateur.

I think it will be more intelligible if I begin at the commencement. At the latter end of March I make up a small hotbed, large enough for two hand-glasses; those the tops of which can be removed are the best for the purpose. After a few days I put some mould on the bed and some fine at the top. I sow the seed rather thickly, and sift a light covering over the seeds. I press it down a little, and water when required. By the end of May the seedlings are fit to be pricked out. I have a small bed in a warm corner, the size of a three-light frame, where I winter Cauliflower plants. These are planted out by this time, leaving the frame vacant. I turn out the mould about a foot deep, and put some fresh dung in to make a little heat. I return the mould, and in two or three days fill the bed with the Celery plants. This will hold about three hundred.

Just after this I make up a hotbed for out-of-frame Cucumbers. I do not exactly remember the dimensions, but it is for three hand-glasses, with about two feet and a half space all round the bed from the outside of the glasses. Thus, if the glasses are two feet square, the bed would be seven feet wide and thirteen long, and about a yard high. I put some fir slabs round the outsides. After the Cucumber plants are planted under the glasses there is a large space vacant for a month or so. This is just the place for the Celery. This bed, in addition to the other, will hold as many plants as I want, and, perhaps, a few for a friend.

In about a month the Cucumbers begin to spread, and it is time for the Celery to be shifted. I look out a place for a bed. I mark it out five feet and a half wide, and as long as the quarter of garden is wide. I then throw out the earth on each side about a foot deep. Now, all the Calendars, &c., recommend plenty of rotten manure for Celery; but I get a heap of fresh dung, with some fresh-cut grass and leaves. I begin at the end, and take out about four inches deep and the length of the spade. I put a good layer of this fresh dung. I then mark three feet and a half back, and put this on the fresh dung; then put fresh dung for another bout; so I go on to the end. In four or five days it will be a little dry on the surface, and a little warm under. I then plant the Celery very carefully, doing it with the spade, putting the plants ten inches apart in the rows, and the rows fifteen inches apart. I give them plenty of water, and three or four times after I give them a little guano in water; they flag, but very little, and soon recover. I earth them up when they require it, doing it carefully by hand.

In another week I put out another bed, and in another week another bed, and so on till I have enough.—G. LEWIS, *Blagdon, near Bristol.*

MICROSPERMA BARTONIOIDES.

THIS is the principal plant in the list inquired after by Mrs. Jane Forrest, of Forrest Lodge, Glen Alpin, by Morven, or rather, Morbhein, in Scotland. (See p. 181.) All that was known about this *Microspermum* in this country, up to the end of 1854, was published in THE COTTAGE GARDENER at that time. (See Vol. XII., p. 469.) Since then Mr. Walton, the inventor of the Waltonian propagating case, and I, have been growing it against each other, but he has the advantage over me with his "case," in which he can rear any plants or seeds. But before I enter on the merits of our rivalry here, let me tell to all whom it may concern, that *Microsperma Bartonoides* will not pay for his or her keep out of doors in the climate of London; that it is the most difficult of all the annuals to rear during the first stages, or until it is safely pricked off from the seed-pot; that heat is "ruination" to it; that once on its legs it is as easy to grow as a *Collinsia*; that it will grow to two feet in height, and branch off from the pot in proportion; that it is a deeper yellow than *Eschscholtzia*; that it is one of the best pot annuals; that if it were reared in pots till it was six or eight inches high and coming into bloom, it might be trusted out into a bed or border in a

sheltered place; and that it would flower there till it was killed by the frost, after ripening abundance of seeds.

I said that I had a quantity of herbaceous *Calceolaria* seedlings which proved very useful for planting out between bedding-plants in May, by keeping up a show till the bedders were in full field. Well, this time last year three seedlings of this *Microsperma* came up among the little *Calceolarias*, which received the same treatment throughout, and were planted out at the same time—towards the end of May—at least two of them; the third died in February. The place was most favourable, and they did not want from inattention; but still the return they made me would hardly cover the cost. In 1855 my plants of it in pots were not much behind those of Mr. Walton; but this year Mrs. Walton, who excels in the more delicate handling of such practical difficulties, undertook the sole management of this department, and it is from a leaf out of her book that I am enabled to say decidedly what this new plant really is. Mrs. Walton had whole masses of it in pots in the greenhouse all the summer without the least appearance of being drawn up, and yet some of the plants were nearly two feet high, when they seemed to want a shift; and I have no hesitation to assert my belief that this plant may be grown so as to be a full yard in diameter and nearly as much in height, and that it would be one of the very finest things for a large conservatory from the beginning of August to the end of September; but little plants could be had in bloom in June, and it would be about Midsummer that such young-established plants would be fit to plant out for a bed.—D. BEATON.

FORMATION OF BORDERS FOR WALL FRUIT.

Soon after my arrival here mildew, green fly, and red spider made sad havoc among our Peach and Nectarine-trees. The mildew was the most calamitous, doing its work quickly; the leaves for the most part curled, became thick and fleshy, and many branches cankered and died.

This occurred on a wall two hundred feet long. The border, which is sixteen feet wide, had not been examined for the last fourteen years. At that time it was planted with Strawberries at a cost of £25.

After much pains in applying the ordinary means of repelling the enemies with which the trees were attacked without doing much good, I was obliged to leave the trees to their fate, and I was told that all Peach and Nectarine-trees in this country (Ireland) suffered much from blight, and, judging from the mutilated appearance of the trees, I was so far led to credit the story.

There were, however, on each tree enough fruit to let me know what sorts they were, and I found, with the exception of one *Royal George*, and one *Late Admirable*, all the varieties on this fine wall were a parcel of clingstone Nectarine rubbish. I had thought of endeavouring to renovate the old trees; but on this discovery I resolved to have them grubbed up every one.

On examining their roots I found them long, and penetrating deeply into the subsoil, which is a stiff, yellow clay, fit only for making bricks. The roots were all warted and throwing up suckers; the hearts of the trees were dead; life seemed only to be preserved by the bark and a thin rind of fresh wood. I did not wonder now at the people telling me of the trees in this country suffering so much from blight. If their roots were in the same state in which I found them here, the finest climate in the world, united with the fingers and thumbs of all the gardeners in Scotland, would not save them.

I had a new plantation made of the best runners of this £25 Strawberry-bed. They were held in high estimation, although we could not gather more than forty quarts throughout the season; and probably, if I had not begun the job, I should not have been allowed to disturb them.

I began at one end of the border, and opened a trench eight feet wide, three feet deep, and parallel with the wall, laying the soil on the front of the border, and all bad stuff carted directly off. I then filled in eighteen inches of rough lime-rubbish, over that a foot of turf packed edgewise, and over that a preparation of decayed turf, leaf-soil, a little dung, and sand. In this I planted my young Peach-trees.

Other new works equally important going on prevented me from coating the entire breadth of border with drainage. I had, however, a drain brought from every tree to the front of the border, which emptied into a main drain common to all. This was, perhaps, overdoing it; but I was determined to have no damp lodge about their roots, and that when artificial watering became necessary it might pass freely off. Communicating with the drainage under the wall, and with the offsets to the front of the border, I had air-drains placed, coming a few inches above the level of the soil, with the intention that, when water was not passing, air might travel, which is, perhaps, as useful an irrigator for heavy soils as we can apply.

When the front part of the border was done, and all finished, it had a pleasing slope; the border, previously to this dressing, was a dead flat. I had now the fullest approbation of all who lamented the Strawberry-bed, and with impatience we wait to watch the progress of the trees.

Another length of border I served in the same way, which was planted with Apricots, Figs, Cherries, and Pears. The Apricots and Figs were good; some of the Cherries were already dead; the Pears were out of all bearing, were making a profusion of wood; their spurs, or *snags*, were enormous. I had them attacked with a saw and carpenter's chisel. This is rather different from the *finger and thumb*, but in this case it calls for no apology. Their roots, I need not say, were very strong and deep. I cut them back, raised them, and fed them with turf, &c. Under some of the trees I found precaution had been used to prevent their roots going down by means of about a yard of flag. However well it might suit that purpose, it is, in my opinion, a thing altogether out of place under a fruit-tree. The mere area of a yard would not long serve as a preventive to the roots going down; and, even supposing the whole border to be flagged on a clay bottom, it is not natural. When water is applied, which is sometimes necessary, it only serves to retain the water stagnant round the roots, which, in my opinion, is about equal to the clay bottom itself. Even admitting the flags to have a fall towards the front of the border, the water does not pass off so naturally as down through the lime-rubbish, neither is there so much heat imparted as by means of perfect drainage.—WILLIAM MILLER, *Gowran Castle Gardens, County of Kilkenny*.

GENERAL NOTES FOR JANUARY.

OUR wishes are presentiments of the capabilities which lie within us, and harbingers of that which we shall be in a condition to perform. Whatever we are able and would like to do presents itself to our imagination as without us, and in the future; we feel a longing after that which we already possess mentally. It is by such wishes that we make progress in gardening operations, and, therefore, with the NEW YEAR, when Nature is preparing to unfold her beauties afresh, it behoves us to take a retrospective view of the past twelve months, both to warn us by our failures, and to cheer us on the right path of knowledge by the experience of our successes. A memorandum-book of the time of sowing, transplanting, flowering, and gathering of fruits and vegetables, and the particulars of the treatment given to them will be a useful annual of garden operations.

A sowing of the *Daniel O'Rourke Pea* may now be made on a dry, warm situation. *Prince Albert* is also an early Pea, but more susceptible of injury from frosts than other sorts; therefore it is advisable to sow it in pots, to be transplanted at the beginning of March; also, a sowing of *Early Mazagan* or *Marshall's Early Prolific Broad Beans* in the open ground. A small sowing of *Lettuces*, *Cauliflowers*, and *Cabbages* in boxes, to be forwarded in heat, will be a useful succession or early substitute for the autumn sowings, if they had been injured or destroyed by very severe weather, or by slugs.

To procure good sticks of *Horse-radish* it is now a good time to trench the ground two feet deep, with dung at the bottom; holes to be made with a long dibble two feet from row to row, and six inches apart in the row; and a single crown, with an inch or two of the root, to be dropped into each hole, to be filled up with any light soil.

Where there is the convenience of a two or three-light

frame, *Asparagus*, *Sea-kale*, or *Rhubarb* can be easily forced by taking up the plants and placing them on a slight hotbed, to be covered with any light soil, and supplied with warm linings when the heat declines; or they can be forwarded in the open ground by covering them with pots, or by hoop-pliable sticks over each stool in the form of the old-fashioned bee-hive, and surrounding them with a thick coat of leaves or hot dung.

IN THE GREENHOUSE the New Holland plants are an acquisition, as there is some one or other species of *Epacris*, *Correa*, *Polygala*, *Boronia*, *Pimelea*, *Leschenaultia*, &c., generally in flower. To produce neat, bushy plants, it is necessary to cut them well back when they go out of flower, as, also, the free-growing sorts of Heaths. *Camellias*, while in bloom, should be kept free from damp overhead, and free from drought at the roots, and any over-luxuriant shoot to be stopped, that the growth may be equal and regular all over the plant. To obtain the most healthy display of these beautiful evergreen shrubs, it is now becoming a very general practice to plant them out in conservatory borders, composed of equal portions of sandy peat and loam. The best time for planting them will be immediately after they have done blooming, and before they have begun their season's growth.

Whoever has the means of assisting the growth of a few *Fuchsias* for cuttings and early flowering should select from their stock a few of the best sorts for this purpose, to be freshly potted in peat or leaf-mould and fibrous loam. If the stock of *Verbenas*, *Heliotropes*, or any other such plants for bedding-out purposes is limited, they should now be introduced where a gentle heat can be given to induce them to grow kindly, for the purpose of affording cuttings which, by proper attention, will become strong, healthy plants at the turning-out season. *Calceolarias* and *Cinerarias* should now be encouraged to grow in a warm, moist situation, with plenty of air, without draughts, in favourable weather. Avoid wetting the foliage when water is given; and insects must be destroyed by the cautious application of tobacco-smoke, that their foliage may not be injured. *Tropæolums*, *Kennedys*, *Zichyas*, *Gompholobiums*, *Hardenbergias*, and all such climbers should be well furnished with shoots at the bottom by stopping, to be trained on trellises or under the rafters.

The raising of new varieties of fruits or flowers is a subject that will always afford much useful amusement. A selection of the best varieties of each class should be placed apart from those of an inferior kind, avoiding all that have bad forms or qualities, flimsy petals, serrated edges, or dull colours. If any seeds to produce varieties were saved last year they should now be sown. With the exception of those plants that are usually grown in peat soil, which should also be used when their seeds are sown, the majority of the seeds of other plants will vegetate freely and healthily in a mixture of equal parts of sandy loam, peat, and silver sand. Flat-shaped pots or pans are generally used for the purpose, with two or three inches of drainage at the bottom, covered with a little moss, and filled up with the soil within an inch of the top, and made firm and quite flat. The surface is sometimes divided into four equal parts, for the purpose of sowing four different sorts, the seeds to be as nearly of equal size as possible, with a label to each sort. When the seeds are sown, cover them with the same sort of soil that they are sown in. The general rule with the larger sorts of seeds is to cover them about equal in depth to the diameter of the seeds, and the very slightest sprinkling is sufficient for minute seeds; then cover them with a layer of moss to prevent evaporation, which is to be removed as soon as any sign of vegetation is perceived. The pots should be placed either on the shelf of a greenhouse, or, what is better, in a hotbed frame where the bottom-heat is very gentle, where they grow more quickly, and, on that account, it is preferable to the other situation.

For *Pinks* a top-dressing of rotten dung will be of service in preserving the roots from frost. *Dahlia* roots should be occasionally examined, to see that they are not suffering from damp or mildew. Any that are affected should be exposed to the air and thoroughly dried, when they may be replaced with safety. A small collection can be easily preserved in pots, placed on their sides under the stage of a greenhouse, during winter.

Pelargoniums may be kept perfectly hardy at this season

by the admission of air at all favourable opportunities, and, whenever there is a necessity for a little fire-heat to exclude frost, the shoots will be less liable to injury than if they had been confined, when elongation exhausts the strength of the shoots, and produces spot and mildew, which disfigure the foliage, and very frequently prove fatal to the plants.

If the weather continues mild *Roses* may be planted with safety, and protected with mulching or a good coat of rotten dung, to preserve the roots and to afford nourishment, as liquid-manure after every shower of rain.

Auriculas, *Carnations*, and *Picotees*, in pots under glass, will now begin to grow, and must not be allowed to dwarf for want of water; plenty of air to be given by drawing the lights off the frame during the day, and tilting them a few inches high at night. The lights should never be closed unless severe frost sets in. A north aspect is the best for many such plants, as the rays of the sun after frost are more destructive than many degrees of frost.—WILLIAM KEANE.

ON CATCHING SWARMS AND CAUSES OF SWARMING.

MR. M'LELLAN, in his notice of catching queens and swarms at page 80, gives the following directions:—"When the rush has terminated remove the parent hive, and in its place set an empty one; place the queen therein; the bees on returning, finding her at home, take possession, and the thing is done." He means that the swarm is secured; but he does not say how the queen is kept in the hive with the door open, nor where the parent stock is placed. If more than one queen left it with the swarm the thing, of course, would not be done, nor if part of the bees possessed another place. In the latter case neither his plan nor the common one would prevent the swarm taking flight again to the place of its own choice, especially if the cavity contained old combs. That so often happens, to the loss of bee-keepers, that it requires no comment. But, supposing his plan to succeed, and the parent stock not to be removed beyond the usual range of the bees' flight, the greater part of those that leave it would return laden to the place of their old home, and the stock with brood be reduced to a mere skeleton.

My answer to a correspondent, "When your bees attempted twice to swarm there could be no queens with them," was construed as if I had said that bees swarmed without queens. Mr. M'Leellan leans to this; at least, he says, "legitimately it bears that interpretation." Be that as it may, I pass on to his own statement connected with it: "That swarms accompanied by a queen all through their flight, and when they settle never return, must be strained and unnatural." When once a swarm has settled or clustered round a queen, what could induce the queen to fly back either to meet instant death from the one already in her place, or, if now she must be an old one, and her jealousy would lead her, to destroy the brood for queens in the cells? and that would subvert the rule of swarming for the season.

"The swarming signal may echo," cannot mean the noise of the queens in their cells, nor any peculiar sound of the bees at that time, for before this the old queen has left with a swarm. But to assert the cause of her leaving before her successors appear, to use the words of Dr. Dunbar to myself, would be only cutting a knot we cannot untie; and I think he truly adds, "Nature has so willed it." Nevertheless, Mr. M'Leellan cuts it, for he says, "the idea of swarming does not originate with her." What then? Does she not deposit the eggs, both for male and perfect females, perhaps three weeks before, and thus prepare the way for swarming?

Mr. M'Leellan makes some brief remarks, at page 133, on what I said in No. 429 respecting pollen, and the unfruitfulness of queens being sometimes the cause of bees dying leaving a store of honey. The first he calls "complicated statements," without one word of proof; the next he seems to think that he has lit upon something new; but, as he invites the opinion of others, it is not for me to speak. I may, however, observe that, as there are no drones or male bees bred in winter, queens reared from "workers' grubs" during their absence must, of course, be barren; therefore it

is of little consequence, as regards the question at issue, whether the bees make another queen or not. This important fact seems to be overlooked by some writers on making artificial swarms.—J. WIGHTON.

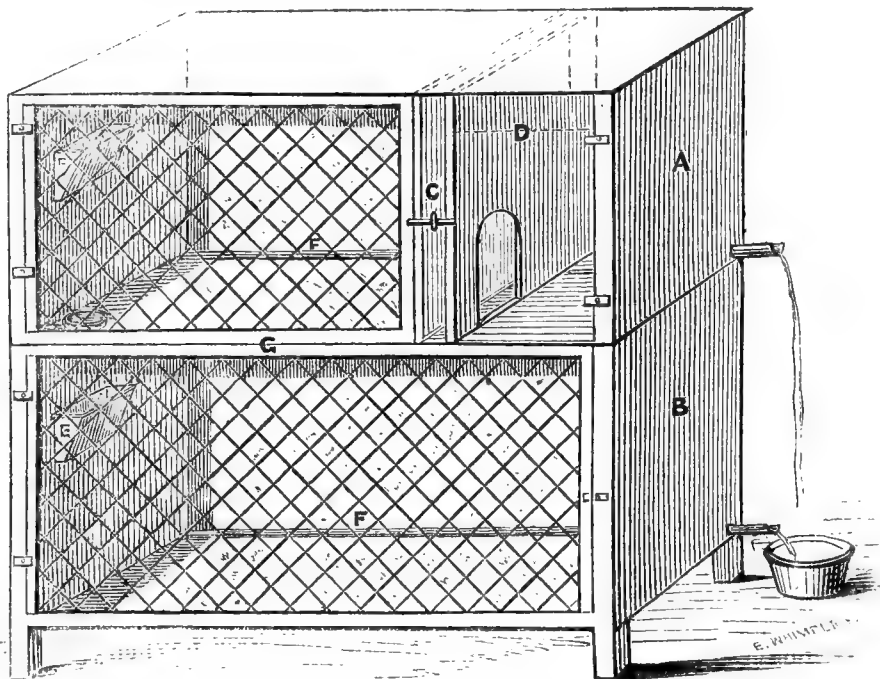
MANAGEMENT [OF RABBITS.

THE RABBIT-HOUSE.

IN order to breed the fancy Rabbit with any prospect of success, it is necessary to provide a suitable house, fitted up in such a manner as best to afford those comforts and necessities that their habits require. A spare hay chamber, or other well-built, dry outhouse, provided that it be lofty and free from all draughts, will answer every end when it is not considered worth while building a house on purpose. The Rabbit-house should have a window sufficiently large to admit of free ventilation when open, and capable of

admitting light enough to show the stock to an advantage. It should be placed opposite to the hutches, so as to throw the light directly upon the Rabbits. If the house be erected purposely for fancy Rabbits, it should be built of brick, and covered in either with pointed tiles or slates, and in both cases the roof is better underdrawn. The window should be at the opposite side to that on which the hutches are arranged, and, if possible, let the window be on the sunny side. It should be protected from injury at the outside by a frame, covered with the ordinary galvanised fencing wire. The floor should be either of boards or asphalt.

HUTCHES.—The hutches themselves may be either fixed or moveable; if the former, it is better to have them all alike externally, as this will give uniformity and neatness to the whole; but if moveable, they may be constructed according to the taste of the fancier, or the purpose for which they are designed. If the hutches are to be fixtures they may be erected in rows one above another, in numbers suitable to the size of the building and the stock it may be desired to keep.



- A. Perspective view of doe's hutch.
- B. Ditto of buck's hutch.
- C. Sliding division to doe's hutch.
- D. Door to nest box.
- E. Hay racks.
- F. Urine conductor.
- G. Wire doors.

Each hutch should not be less than two feet from back to front, three feet six inches long, and two feet in height. The doe's hutch should have a sliding division about a foot from one end, with a hole at one of its extremities, tinned round, to prevent the Rabbits gnawing it. The object of this slide is to divide off a portion of the hutch about the time the doe is expected to kindle, which will present a snug corner to receive the nest. It may be withdrawn when the young are about a month old, and begin to creep from the nest, thus affording a greater space for their accommodation and gambols. The front of the doe's hutch should be in two parts; one with a wooden door a foot in breadth, corresponding to the division within, and the other with a wire-framed door, filling up the remainder of the front. These doors should be fixed on hinges, and fasten with wooden buttons. The advantage of having the whole front in doors is, the greater facility it affords for catching the Rabbits, and also for cleaning the hutches out; and I would earnestly impress upon the mind of the young or inexperienced fancier the great importance of strict cleanliness in the abodes of these animals. The floors should be of inch red deal, which does not readily decay; they should have a slight inclination backwards, to allow of all moisture being carried off by a pipe grooved out at the back of the hutch, as shown by F in the diagram. Each hutch should be fitted with a small rack for hay, as seen at E in the diagram.

A buck's hutch, when fixed, should be the same as the doe's, only without the division, and having the whole front either in one large wire door, or two smaller folding doors, meeting in the centre, and fastening by one button. The trough best for all purposes is an ordinary spittoon, which is wider at the bottom than the top, and cannot be overturned, and, moreover, the Rabbits cannot scratch out and

waste the food. The moveable buck's hutch should have round corners in addition to the aforementioned necessities. Having given a brief sketch of the Rabbit-house and fittings, I have only to add, how great an advantage it is to have the hutches lime-washed out two or three times a year, both for the health of the stock and the general appearance.—P. B.

WARWICK CASTLE.

SOME years since I visited Warwick Castle, and was so highly delighted with the first sight of this noble monument of England's ancient grandeur, that, in passing through Warwick by rail the other week, I could not resist the chance of having another look. As I had previously seen it from the Upper Warwick Road from Leamington, I made direct for the arched entrance; but to any one that has not seen it, and can spare time, I would strongly advise getting out at Leamington, and driving or walking along this beautiful road, as it is from thence the visitor ought to have the first impression to give justice to this warrior's home.

I have seen many castles and palaces; but I have never seen one, in my opinion, equal to Warwick Castle, viewed from this road. The sky outline, stamped with its various ancient-warlike towers; the base, or ground outline, skirted by the slow-flowing Avon; the noble bridge, backed by the dark, massive foliage of the Cedars of Lebanon, intermingled with the graceful, waving Birch and Larch, &c., form a whole that, without much alteration, some of our huge modern palaces will never equal. The entrance outside from the town may be compared to the lid of a rough-hewn

chest full of brilliants, but not till opened giving evidence of its contents.

Well, without demanding admittance by the sound of the battle-axe or battering-ram, I took the more modern and agreeable mode of announcement—that of the bell. The gate opened, and there appeared a spare, pale-faced, little old man, whose time-worn face was furrowed over with years, and hoary was his hair, surmounted by a two-cornered hat, and dress to match. In fact, Garrick in his best days never had a better representation of an Echo. Coupled with the entrance hewn out of the rock, which our ancient friend apparently had just walked out from, he gave one of those surprises that keep their hold upon the memory. So much for the first visit. Last week I was again at the gate. Again it was opened. There were the pass and the rocks certainly; but, alas! where was Echo? for sure enough there stood in his place no Echo; but a jolly, red-faced old coachman, dispelling, for the moment, my first favourite impression. Yes, Echo, like his lord, had, in the meantime, passed away. Their echoes will be heard no more, and the sword of the redoubtable and mighty Guy is wielded with abler, though not with more worthy and appropriate hands. Not having antiquarian enthusiasm enough to inspect the legendary and mystical lore when under the care of our ancient friend, I gladly responded to the call of his successor by way of hurrying the passing cloud, and, as it were, catching a glimpse of the moon through the gloom of the night. Following the guide with this intent, I was soon immersed in the history of the warlike doings of Guy of Warwick, tried to wield his sword, and wished that Wallace in his need had had such a tool in good working order at the entrance betwixt the rocks, in front of the base Monteith, Edward I., and some scores of his blood-thirsty hounds, that barked to see the patriot's heart torn from its place before it ceased to beat, with a Bruce or an Andrew Hoffer at the other end similarly provided to prevent their retreat. With this warlike feeling I entered the gorge so happily cut out of the solid rock by one of Warwick's lords, the sides and recesses of which are now here and there beautifully clothed with Ivy, Ferns, Grasses, Mosses, Lichens, &c., under the shade of overhanging Yews and Sweet Chestnuts.

Emerging from this natural, assisted pass, you enter the outer court, formerly a vineyard, and said to produce a profusion of rich clusters of Grapes, that were highly relished by the travel-worn, thirsty soldiers in the time of Henry IV.

Here the stupendous fortifications stand out in bold relief and magnificence before you. On the right is the noble tower dedicated to Earl Guy, having twelve side walls ten feet in thickness, a base of thirty feet in diameter, rising to the height of 128 feet, and is a noble specimen of the architectural remains of the fourteenth century. On the left is Cæsar's Tower, said to be coeval with the Norman conquests, rising to the height of 147 feet, and bidding alike defiance to time as to the depredations of man, and eight hundred years of the former leave little impression, as its turrets stand entire, like the rock which forms its foundation.

But I am forgetting, amongst embattled walls, ponderous arched gateways, portcullises, &c., that I am not 200 yards from the gate, and am writing a chapter for THE COTTAGE GARDENER. Well, this same former vineyard is now partly in grass, and here the worthy gardener, Mr. Spinks, has been displaying his taste, which, from what our kind friend states, must certainly be a great improvement on what he found; but I hope he will excuse me in stating that, though his somewhere about twenty round clumps of *Savin*, *Berberis aquifolium*, *Rhododendrons*, &c., on the grass are much to be preferred to a hostile legion of mail-clad, ruthless warriors, or that they would not disgrace the grounds of the Crystal Palace, still, in my opinion, beds of any shape are out of place here. Had I my choice, nothing I should like to see better than a noble old Oak or two un mutilated by the hand of man, with some dozen colossal equestrian statues in groups, representing its ancient rulers, after the style of M. Simonds, of Brussels—Godfrey of Bouillon, or Richard Cœur de Lion, which would not be out of place, for more of Warwick lords than one joined the Knight Templars. But nothing connected in this way with England's olden times could be placed amiss, as the lords of this noble fortalice truly deserved the motto, "*Aye ready*," either in hurling his sove-

reign from his seat, that his father had reinstated, or even undoing his own work in this way, and letting kings know, by practical experience, that they were mere puppets in their hands—in fact, the *English Douglasses*; for, like them, they belled the cat, and were not afraid to take the head off their king's favourite when it suited their purpose.

In place of the base and a good part of the height of this noble castle being covered with *Yew* in one unbroken line, I should, in places, clear it to the ground, introduce here and there the large and small-leaved, variegated, and green *Ivy*, the latter intermixed with the *Virginian Creeper*, *Clematis montana*, a piece of *Pyracantha*, *Cotoneasters*, &c. As it is already flanked up with one of the noblest of trees for the purpose, the Cedar of Lebanon, all it would be necessary to do would be to thin out and give the grass a greater breadth, and the shrubberies a more natural and broken outline, and connecting the grass and shrubberies with masses of *Daphne cneorum*, *Rhododendron ferrugineum*, Heaths, Butcher's Broom, *Cotoneasters*, Wallflowers, Ferns, &c., with a good group or two of *Yucca gloriosa* and other varieties.

Turning to the right, a drive leads on to the stables, on each side of which Mr. Spinks has again brought his ingenuity into action by raising two undulating banks, and has planted the one on the right very happily and judiciously with Scotch and other Firs as a background, to shut out an uninteresting part of the town of Warwick, with Yews, Hollies, &c., in the foreground, and broken it here and there with groups of *Cupressus macrocarpa*, *Cryptomeria Japonica*, &c. The bank on the left is planted with masses of Yew and Holly, thickly studded with *Cedrus deodara*, &c. Had means been allowed, Mr. Spinks, of course, would have introduced, on the side of the bank facing the principal lawn and the castle, massive groups of stone, giving it the appearance of nature, and, as it were, continuing out the character of the place.

Having no business at the stables, I stepped over the left bank, and took a walk that leads to the greenhouse, where the celebrated vase forms the principal object, which truly deserves all that has been said of it.

Keeping the same walk, I soon found myself at the kitchen-garden, and was pleased to see that about one of the first alterations the present noble lord effected in the garden was, not to turn away a good old servant, but to set about and build a comfortable and convenient house for him, where every gardener's house ought to be in such places—close to the garden. The garden is small; but, judging by the Apricot, Peach, and other fruit-trees on the walls, the situation is good. There are also some excellent espalier, Pear, and other trees, which I saw, by the fruit stored in the fruit-room, even in this season of scarcity had not failed.

There is a very limited quantity of glass; but what there is good use is made of. I am deceived if there is not some finer fruit, and more of it, gathered next season, according to its size, from a Peach-house planted only last year, than from any house of trees in pots in the kingdom. His Vines are healthy, and, what is of equal consequence, well ripened; and the remnant of Pines he still clings to are worthy of his former times—times the celebrity of which appears by the barrow-load of first-prize tickets tastefully and appropriately arranged by one of the daughters of the house of Spinks along the front of the shelves of the fruit-room. He has been a lion in his locality in this way.

On leaving the kitchen-garden in company with Mr. Spinks, we walked down a glade fronting the greenhouse, at the end of which the present lord has planted an extensive avenue of *Cedrus deodara*, which, though only put in three years, are now fine plants. Behind them is a row of *Pinus insignis*, which are doing exceedingly well, and their cheerful light green foliage contrasts beautifully with the *Cedrus deodara*; but, unfortunately, they are planted so close to the latter, that in a few years, if left as they are, they will meet. In my opinion the *Pinus insignis* ought to be removed back without delay, as there is still time; and also a very fine-spreading young Oak ought to be cleared away, that completely shuts out the view of this avenue from the glade facing the greenhouse, as every year it stands it will be more difficult to reconcile the mind to sign its death warrant.

Those that are about to plant avenues of this descrip-

tion should, if possible, visit Dropmore, where they will see, in the Cedar avenue, the bad results attending close planting.

On wandering out of this avenue along the banks of the Avon, the river front of the castle comes into view, with the mount, its towers, the cascade, and the fine tower of St. Mary's Church, forming really a fascinating scene, and, as you approach towards the castle, is still kept up by groups of noble Cedars of Lebanon. Close to the water, and a little way from the castle, is a beautiful picturesque group of weeping Larch, that on sight must shake the countenance of the croakers against this tree, as deserving a place amongst the picturesque. Close to them is a fine group of Sweet Chestnuts, and flanking up this side of the castle are two magnificent old Cedars, not so remarkable for their fine stems as their numerous and sturdy old arms, which, as it were, embrace the castle and river. From under their shade is seen a beautiful view of the cascade, which one could have wished to have seen more wild and irregular. However, it is a massive affair, and, taking into consideration that it was done by or for a miller, it is not to be despised.

In sweeping the eye across the river, it meets a very unsatisfactory object in the shape of a straight canal cut through the meadow, in connection with, and only a little way from, the river. Had this been the work of a Duke of Bridgewater, or for Hampshire or Dorsetshire irrigation, it would have been excusable; but for a Warwick lord to mangle and distort the Avon in front of his castle in this manner is unbearable. What would "Capability Brown" have said to this? For though I see learned men up to this day sneer at his gigantic artificial rivers and lakes, still they must allow that he was one of the first to set the example to follow nature, which, I dare to say, is the only true teacher; and had my great predecessor been called in here, he would have advised swamping the whole meadow, and allowing the water to lash the base of the opposite hill, which is now covered with fine timber trees, and even allowed these moderns more room for their favourite swan or two. Why not so?

On retiring round the house you pass a huge artificial mount, said to be raised by Ethelfleda a thousand years ago, where stood the ancient keep raised by that spirited princess to keep in awe the turbulent spirits of the age, which would now, in my opinion, make one of the best terrace flower-gardens in the country; but, if not turned into this, I would strongly advise clothing it with Ivy, Virginian Creepers, &c., and introducing Yuccas, Houseleeks, Sedums, &c., where, in dry seasons, it appears difficult to keep other plants alive.

A little farther on some men were plastering up the stem of by far what has been the finest Cedar of Lebanon on the grounds, half of the top of which had fallen a few days before, and so mangled what is now standing, that it will not be safe, at least, in stormy weather, to remain near it; for this tree, unfortunately, like the Elm, is liable to this when full grown, and seldom gives any notice previously to its fall.

This brought us again to the outer court; but, before parting with Mr. Spinks, he showed me a place on the right, between this court and Warwick, which formerly had been a stone quarry, and is now partially levelled and planted with *Cedrus deodara*, *Taxodium*, &c., which appear to thrive exceedingly well; but, as it appears to me, a noble place of this description ought to have a distinct flower-garden, and the above, methinks, would be more appropriately applied if laid out as such.

Allow me, in conclusion, to thank Mr. Spinks for his courtesy and attention, and record what I was told, that the present Lord of Warwick is not only a great admirer of the best varieties of the Conifer tribe, but also, in company with his lady, a generous benefactor to the poor.—D. FERGUSON, *Stowe, Buckingham.*

NOTES FROM PARIS.

M. CARRIÈRE, head of the fruit ornamental tree department at the Garden of Plants, has lately published a work which is intended as a guide to propagators. It is entitled "*Guide Pratique du Jardinier Multiplicateur, ou l'Art de propager les Végétaux par Semis, Boutures, Greffes, &c.*" This is a small duodecimo volume of about 270 pages. It is published by Dusacq, and sold at three francs and a half.

M. Carrière is also author of an excellent treatise on Coniferae.

Another literary novelty, just announced by the same publisher, is a work on drainage, by M. J. A. Barral, chief editor of the *Journal d'Agriculture Pratique*. It is entitled *Drainage des Terres Arables*; but this is in three duodecimo volumes, which together make about 1,500 pages. It contains ten plates and several hundred wood engravings. The published price is fifteen francs. In England most people interested in the cultivation of the land do not require many arguments to convince them of the utility or importance of draining their garden or fields, or much instruction as to the practice; but here the operation is not known or understood among the great body of those who live by the soil. The very name "drainage," and many of the terms employed in describing its various forms, are all of English origin. Those writers, therefore, who recommend the modern system of culture, and explain its advantages to the French people, deserve well of their country. But for anything like general circulation among that class most likely to be benefited by it, M. Barral's work is much too lengthy, and might have been greatly condensed with advantage. None but a practised book-maker would have run out such a subject to anything like the half of fifteen hundred pages.

M. Victor Borie recommends *Charophyllum bulbosum* to the notice of kitchen gardeners, and he states that, though not quite new, since it was cultivated, about ten years ago, by M. Jacques, gardener to King Louis Philippe, still it is but very little known as an esculent, and, therefore, may be considered as a novelty. It is stated that, when boiled and eaten with butter, the bulbs of this plant are delicious, mealy, and agreeably flavoured. They are also recommended as being very light and nourishing, while they may be cooked in a few minutes.

With respect to culture, the bulbs are raised from seed, which should be sown in a rich, slightly moist soil about the end of August or in September. The autumn sowing is said to have been found much more satisfactory than that of spring. The seed may be sown in drills, or broad-cast in beds. In either case only a very slight covering of earth is required. The drills may be about six or eight inches apart; no precautions against frost are required. The young plants come up about the end of February or early in March, and the after-treatment is the same as for Carrots. The bulbs may be lifted for use in the month of June; but the general gathering should not be before the middle of July, and they may be stored like Carrots. The bulbs which are chosen for seed are not put in the ground till March of the following year. It has been found that the largest and most vigorous umbels give the best seed; that is, such as produce the largest bulbs and the most abundant crop. The seed should not be sown in soil which has been previously cropped with Celery, for it has been observed that the result is not satisfactory.

In the course of the summer I spent a few days in the vicinity of Montfermeil, a village situated about twenty miles from Paris. This part of the country is, in general, much elevated and thickly wooded; but it is only near the valleys where the trees attain anything like their real height. Spacious avenues traverse the wood in different directions, and in some places they extend to more than two miles. There are one or two small market gardens round about; but cultivation seems to be in a very primitive state. There are also some small private gardens neatly enough laid out, and full of all the common things which are required for ornament or utility. People here must always have a number of statues among their flowers near the house. Apollos and Venuses preside over every clump; yet in one case, where everything was on a respectable scale, and in keeping with the modern school, I noticed a singular deviation from good taste. Instead of *Cedrus deodara*, *Araucaria imbricata*, or other handsome evergreens, several large specimens of *Rhubarb* were the only occupants of the smooth lawn in front of the drawing-room windows.

In another place I was shown ten or twelve fine healthy Orange-trees, which might average about six feet high. They had been obtained for about sixpence a-piece from the gardener of a gentleman, who, having too many for his house, had ordered these to be thrown away. Here,

also, there was a large conservatory full of the commoner things. The blind employed for shading is made of neat wooden rods, which are attached to one another by means of wire, and in such a way that one rod may lie flat upon that which is next to it when the blind is rolled up. Such blinds are also much used in Belgium as well as in France; but I had never seen them so well made as in the present instance. In point of durability they are, perhaps, preferable to canvass. The mode of shading on the Continent is altogether different from what we generally see in England; for here every greenhouse has its terrace or gangway on the top, from which, when necessary, the workman may adjust the blinds; but he may also draw them up or down at pleasure without going on the top. In winter, when extra covering is sometimes required, it may be supplied with the greatest convenience either from the top or bottom without any risk of breaking glass. Every gentleman here has an outhouse, where he and his friends may smoke and play at billiards. This room, of course, contains an enormous billiard-table, so many chairs, with an amazing variety of pipes, cigars, tobacco, and everything likely to keep one from yawning over a tedious game. But I must observe, for the benefit of those who may be fond of imitating, as they think, grand people, that the French gentleman would never be so lost to all sense of propriety and politeness as to abandon the ladies after dinner, and shut himself up in a billiard-room amidst the fumes of tobacco. It is only in England that we see such an absurd and unmannerly custom.

Passing from the garden to the farm, I was much interested with the arrangements of the dairy, which is under the immediate superintendence of madame herself and one of her daughters. Mademoiselle, though only fourteen years old, and though educated in every respect as a lady should be, has, nevertheless, been carefully taught all those useful domestic duties which young ladies seldom know anything about. She has a small churn of her own, which altogether is scarcely the size of a hat-box, and in a quarter of an hour or twenty minutes she can make as much butter as is required in the family for two days. My visit to Montfermeil happened only a short time after you had published my communication on butter, in which I recommended the "Girl's own Churn," &c.; and now I had an opportunity of seeing in practice the very thing I had fancied, besides partaking of the butter thus made.—P. F. KEIR.

MEETING OF CULTIVATED FRUITS AND VEGETABLES TO PROTEST AGAINST THE WASTE OF THEIR FOOD.

(Continued from page 203.)

THERE were now loud calls for Mr. VINE, who rose and said, that "no one rejoiced more than he did at this important meeting. With all his education and training at Hampton Court, still he was no orator. You are all well aware," he said, "that our family, for many years, was half poisoned by lumps of garbage (hear, hear), until I made it known, many years ago, that I had found capital food in a large sewer, which I discovered near me. I do not care what soil I am grown in, so long as I get plenty of rich liquid (hear, hear). I am quite convinced of the great utility of the sediment and charred peat mixed. I am quite concerned to hear that the sewage of London is proposed to be thrown into the sea" (much cheering).

The Vice President, Mr. CABBAGE, next rose and said, "that he was not accustomed to speak, being more in the field; that his family were mostly dummies (laughter). I beg pardon, I mean Drumheads (cheers). You may expect to hear much from me; but I assure you that our treatment is so simple in the Fulham Fields, that, by proper sowing, proper trenching, with plenty of manure, we are always good-hearted ('hear,' from a half-starved Buckinghamshire Turnip). As I understand that we have met here to-day to give our opinion on the possibility of converting the sewage of London into a rich manure with the Irish charred peat, I, for one, am most willing to bear testimony to its goodness, and express my conviction that to our country friends it will prove a great boon, and I advise them to stir their stumps in the matter" (great cheering).

His Royal Highness the STRAWBERRY wished to say one word before this meeting separated. "My family are well known to you all (hear, hear). It matters but little where we came from—Chili, Virginia, or the back-woods of Great Britain. Travelling has altered us much; we were like the rest of you at one time, very wild, and always produced runners (laughter). Education does wonders to us all. We were at one period called Woodberry; but since the days of two celebrated Dutch gardeners we have been called Strawberries, because they put straw for us to lie upon to keep us from being soiled (hear, hear). Feeling as we do so lively an interest in this great meeting concerning additional food for the masses of the vegetable kingdom, I feel it my incumbent duty to give my most cordial consent, for charred peat alone has proved good to my family" (tremendous applause).

The meeting becoming impatient, loud cries came from all parts of the room for Mr. BLACK-SPINE CUCUMBER, from Camberwell. He coolly rose and said, "May it please your Royal Highness and gentlemen, I have no drawing to show you, as my only practice in that has been with the family of the Vice President (great laughter, and 'hear, hear,' from Mr. Radish). I have listened with profound respect to all that has been said, and it does seem to me strange that an enlightened country as this is should so long misunderstand, and, above all, have such a prejudice against, the very food of the earth. You may call it muck, or dung, or litter, or filth; but I tell you all that it ought to go by its proper name—the food of plants (great cheering), deposited in the earth for our benefit" ('hear, hear,' from Mr. Parsnip. The President here interrupted, and said that he had had a telegraphic message that, unless the speeches were short, THE COTTAGE GARDENER reporter could not stay, as he had to attend elsewhere). "Quite right; I shall give just a few humble ideas of my own upon this interesting subject. I really turned yellow when Mr. Onion told us how they do in Spain—that even the children in his country know the value of the food of plants. My family in this country have nothing to complain of. We belong to the aristocratic side, and very often complain of the gout, and have white powder on our head (roars of laughter). My plan is simply this—that wherever the sewage of London may be carried down Father Thames, it is at the terminus that we should have to do with it. I propose there to have at least six enormous reservoirs, each to hold the flow of at least forty-eight hours, and parallel to each other, with thorough drainage to draw off the clear water (hear, hear), with engine-house, with glass and iron-roofed drying sheds. The space occupied might be some fifty acres (hear, hear). We all know that there are some three millions of acres of rich black vegetable peat in Ireland. It is now in a ripe state. Why allow it any longer to lie there in waste? I have tried it for years upon my family in its naked state; but, had it been mixed with the sediment of our great sewers, it would have been the best of food. I also know many other relations who have used it for years. I am well aware that this is a momentous question, and aware, also, that many valuable salts will be lost in the solution; but to tell me that the sediment will not be worth saving is just saying that there is no goodness in the mud of ponds ('hear, hear,' from Mr. Melon). The reason why the mud of a pond is not rich when first taken out is owing to its having been excluded from the air. Turn it over a bit, and then try its strength ('hear, hear,' from Mr. Swede). I wish to make this London manure portable to all our country friends; and I wish every town to husband up and assist in saving the food of the land. Let townspeople only think that if we were to keep back our good things for even one week ('hear, hear,' from the Staff of Life) from this great metropolis, they, to say the least of it, would be in a terrible pickle (great laughter). In conclusion, I beg to say that I am no civil engineer, but I do think that the works of this great undertaking might all be on the Kentish side. Cannot the north sewage be brought over in the bed of the river in large pipes—at London Bridge for one place? Why not one division of the Thames Tunnel for another? It is only fit for a sewer, and would then be of some use" (great cheering).

The PRESIDENT concluded the meeting by saying, "You have every one done famous duty. This great meeting will go forth to the world through the active columns of THE

COTTAGE GARDENER. We are deeply indebted to Mr. Black Spine for his crispness of observation (cheers, and 'hear,' from Mr. Celery). I am well aware that many of you from a distance are half starved, and you show it (general murmurs). You have to live on a barrowful of wasted manure to six square yards (cries of 'Not so much as that,' and 'Shame, shame'). Go, then, and report this meeting to every corner of our islands, and tell your towns to put the right men in the right place" (hear, hear—great confusion, many of the members going away).

QUERIES AND ANSWERS.

AQUARIUMS.

"Have you the means of informing me of the address of the proprietors of the Ipswich Patent Siliceous Stone Works, and whether they have any agents in Manchester, as I am exceedingly desirous to obtain one of the ornamental aquariums manufactured by them? A few months ago I devoted a propagating-glass of large capacity (but it is far from having that elegance of appearance which I should like to see in such an object) to that purpose, and fitted it up with some of the commonest aquatic plants, &c., such as *Ranunculus aquatilis*, *R. flammula*, *Nymphaea alba*, a few Molluscs, viz., some of the Helices, the *Planorbis corneus*, &c. At first I placed in the vessel a few water-newts along with the gold and other fish, but, being too diminutive, the gold fish very soon destroyed them. I afterwards went in search of the large innocuous *Hydrophilus*, but was unable to procure any specimens of it, but met with large numbers of different species of the Dytisci, for which I was obliged to appropriate a tank entirely, as they are parasitic in their habits.—A LOVER OF NATURAL HISTORY."

[The aquariums you refer to are made by Frederick Ransome, Patent Stone Works, Ipswich.]

FUCHSIAS, WHEN FIRST INTRODUCED.—LILIUM GIGANTEUM FLOWERING.—BRUNSVIGIA JOSEPHINÆ.

"Critics should be correct. Now, in reading over your number for June 19th, 1855, p. 198, in the course of some strictures on a picture by Maclise, it is stated that "Fuchsias were not known to Europeans till some thirty years ago;" whereas I happen myself to recollect one in my grandfather's garden nearly double that time back, and it was then sufficiently large to cover an arbour erected against a south wall; it still existed there a few years since, but, I believe, has since been cleared away to make room for a greenhouse. We all know the story of Messrs. Lee and Kennedy's purchase of a plant from an old woman out of a cottage window, but I have no means at hand to trace back the date of the circumstance—it might be curious to do so. I am quite sure of my own date from my own age, and I am persuaded that a cousin of mine, some years older than myself, and to whom the garden in question devolved, and who is still alive, would recollect the plant I have alluded to equally well with myself.

"Permit me to avail of this opportunity to inquire at what season the new *Lilium giganteum* flowers; and, also, if the well-known *Brunsvigia Josephinæ* has ever been known to ripen seed in England.—SENEX."

[You are quite right as to the date of the introduction of the Fuchsia. It ought to have been said, "some seventy years ago," for *Fuchsia coccinea* was introduced in 1788. However, that does not help the anachronism in the picture.

The *Lilium giganteum* flowers from the end of May to the beginning of August, very seldom earlier or later. *Brunsvigia Josephinæ* has seeded in England, and more than once. There are crosses in England between it and *Vallota*, and other members of the family. All the *Brunsvigias* are true Amaryllises.]

FLOWERING STENOCARPUS CUNNINGHAMII.

"On reading Mr. Beaton's article in THE COTTAGE GARDENER for December the 9th, I find he there states that no one has succeeded in flowering *Stenocarpus Cunninghamii* in Europe except Mr. Weeks, of King's Road. I beg to inform Mr. Beaton that a friend of mine has had a plant grown under that name in flower for some months this autumn, in this county (Norfolk). I have inclosed the remains of a flower taken from the above-named plant, and shall feel greatly obliged by your informing me if it is the same plant that Mr. Beaton mentioned. Am I right in supposing that a crop of Grapes left hanging late upon the Vine does not weaken the Vine so as to injure the future crop?—A YOUNG GARDENER."

[The "remains" are certainly those of the flowers of a *Stenocarpus*. Send up the name of your friend, and we shall offer him as a Christmas gift on the altar of fame; and, to make more sure of an acceptance, just tell him to send us a full and particular account of how he "managed" it. Everybody who reads THE COTTAGE GARDENER would be delighted to read the story, and would endeavour to do the like. Grapes left on the Vine do not weaken it.]

EDGING FOR AN AMERICAN GARDEN.

"Will you kindly inform me what is the best edging for a small American garden? I do not wish to have any turf. I am near a down, where there is a great deal of *Heath*, which I could easily get if it would do. When would be the best time to remove it? I inclose a leaf of a pink Geranium. Is it the *Diadematum* Geranium, which has been so much written about in the pages of THE COTTAGE GARDENER of late? Will you also inform me if honey will be good for any length of time in the comb? I have one hive, which was removed, when taken, to the fruit-room this season. I wish to know if it will keep good until the spring if left undisturbed.—A SUBSCRIBER, Cornwall."

[The best edging for your American garden is the one you like best yourself, and that seems to be the common moorland *Heath*, in which we would join you most heartily. The late Duke of Bedford was also very fond of it for edgings to his Heath garden at Woburn Abbey. Perhaps the present duke is equally fond of it. Any time from the middle of February to the middle of April, or in September and October, are the best times to transplant it from a common. Take it no more than four inches long, and take no balls with it—that is the only secret; but be quite certain to have all the roots safe. When edgings of wild Heaths were made in the times of mad philosophy, only one out of five-and-twenty of them lived as if it were going to die next week, and the rest died in a few months, from having balls about the size of eggs. The balls were planted, and soon dried up, so that no water could penetrate them; it ran down by the sides as off a duck's back. Dry balls, whether from the moors or from the pots, have killed thousands of Heaths, natives and exotics, bedding-out plants, and all manner of plants; but balls for this kind of edgings are the most deadly and dangerous of all. But a square ball, *alias* a peat turf, would remove from the same common, and do uncommonly well indeed, because it was a full-grown ball, and could keep enough moisture till the roots from it spread into or over all your American-plant soil.

The *Geranium* you sent is of the Scarlet race, and of the Horse-shoe section, with coral stems and pink flowers; they call it *Cerise unique*. The *Diadematum*s belong to the old greenhouse kinds—quite a different race.

Honey will keep in the comb as long as you mention if it is really good, fresh, virgin honey. You may see South of Europe honey in combs in London, and buy it too. After it is two years in the glasses, put on the hives.]

CULTURE OF LILIUM GIGANTEUM, LILIUM WALLICHIANUM, AND LAPAGERIA ROSEA.

"In Mr. Beaton's account of the Kingston Nursery he mentions a *Lilium giganteum* in seed. Will he be good enough to say what soil and treatment he would recommend for a

young plant of that Lily, and also one of *Lilium Wallichianum*, and whether these Lilies may be grown in the midland counties without protection, and, if not, what sort of protection they should have?

"I have a cold pit with a north-eastern aspect, a common quick fence on the north-west, and rather shaded by shrubs on the south-west and south-east. It is in a very dry situation; the front is nearly level with the ground, two feet six inches deep, and three feet six inches at the back. It is lined with bricks without mortar to the level of the ground, then a turf wall above, nearly a foot thick, and that is covered with zinc to carry off the wet. I have also put through the turf, at each end, an inch pipe-tile, so as to let air circulate, and caps outside to shut it off when requisite.

"As to *Lapageria rosea* I am following his directions in treating a young plant I had from the Clapton Nursery, and will say how I succeed with it by next autumn.—J. G."

[Both those Lilies will do to be treated exactly as the old white Lily, called *longiflorum* or *eximium*, or as nearly as possible like the Japan Lilies, but they will stand as much heat as an Air Plant; therefore they may be forced on to make large plants or bulbs in less time than many other Lilies; and one-third of good strong loam, with two-thirds turfy peat, is best for them when they are young; and for strong, old plants the compost may be reversed, two-thirds loam and one-third peat; the bulbs to rest, or nearly so, in winter. Your cold pit is the right place for them, but the gigantic Lily is hardy enough to live out the winter with you, but have a good stock of both before you venture on leaving some out over the winter; and when you do, give them the same protection as you would a Fuchsia. Your cold pit, by-the-by, is a capital contrivance. Take great heed of the way Mr. Veitch treats *Lapageria*. Recollect that not one single drop of water must remain one half-hour about, or at all near the roots, except what the soil holds as a sponge would. If you make perfectly certain of that, you may water it three times a day as long as it is growing naturally, that is, without fire-heat or forcing by close confinement, and when it is at rest give it no more water than you would to an old scarlet Lobelia while at rest. We have not the least doubt but *Lapageria rosea* would do very well out of doors in England if it could be treated as a half water-plant from May to September, and as an "American plant for the rest of the year; but then, as it blooms naturally from October to April, like *Jasminum nudiflorum*, we must have it in-doors, and planting it in a border is better than keeping it in a pot; but, Oh, what a lovely climber!]

M'GLASHEN'S TRANSPLANTING MACHINE.

"What is your opinion of the apparatus invented by Mr. M'Glashen for transplanting trees? Does it perform its work well? and what sized apparatus would be most generally useful?—C. P. C."

[Our opinion of this contrivance is founded on its application in the garden of the Horticultural Society before Prince Albert, Sir J. Paxton, and a score of practical planters from beyond the Tweed, and our opinion is this—it is a good contrivance for moving all trees under fifteen years old, and shrubs of the same proportion; and that for all trees above that size no "transplanter" will ever be so good as the manual labour of John Bull and Sandy Macpharlan. Besides all that, this or any other "transplanter" will always do more harm than good unless he who manages any one of them is *favourable to the contrivance*.]

COLEUS BLUMEI DECAYING.

"I have got half a dozen plants of the *Coleus Blumei*, and within this last fortnight, just as they came in flower, they are gone black in the stems, about two inches from the pot, and the leaves all flag. I should be obliged by your telling me what will be a remedy, for I do not like the looks of them at all. They are in a nice heat, about 60° to 65°. The plants were struck in July last, and are two feet through the middle.—A CONSTANT SUBSCRIBER IN CHESHIRE."

[The plants had some sudden check from heat to cold, or a twist in carriage, or something which has caused death to

the main stem; but if the black does not extend down to the pot the collar of the plant may yet push up a fresh shoot. First of all, make quite sure if the black is all round the stem. If it is, cut it down at once, and make cuttings of some of the best shoots; they root as easily as a *Salvia*, or say, much easier than a *Verbena*. If we were plant growers we would throw away our *Coleus* plants before winter, all except one to take cuttings from in March. We would put ten, or twelve, or twenty of the young plants into one large pot, and make a four-feet-through specimen at once; then one more to match it for two stands in the conservatory or front hall, and some smaller plants for other less conspicuous situations at the time of "housing." In the autumn we should cast them all, as we have said, to the same place as old Balsams, Cockscombs, and such-like. Those who keep large plants of it over the winter intend to show them when only one plant is allowed in a pot; but that is no reason for private growers to lumber themselves with it in winter.]

EFFECTS OF SPRING FROSTS ON PEAR BLOSSOMS.

By RICHARD VARDEN, ESQ., SEAFORD GRANGE, PERSHORE.

THE following is the result of an examination of several thousand Pear Blossoms, made last spring, to satisfy myself of the relative extent of injury they sustained from frost, under various circumstances of position.

The mode of proceeding was, to examine in each case a given number of blossoms, generally one hundred. All that showed discoloration, when nipped through the lower part, were assumed to be injured, while those of a natural colour were considered good. Doubtful ones were thrown aside and not reckoned.

1. The first inquiry was, whether blossoms might be taken indiscriminately in all stages of development, or in average stages only. On examination, it was found that late blossoms were least injured. Thus, in one hundred of each,—

	Bad opened blossoms.	Bad unopened.
Colmar d'Eté had	100	42
Susette de Bavay	99	59
Easter Beurré.....	94	64

giving an average of 98 bad blossoms out of the hundred of those fully opened, and but 55 out of the hundred of the unopened. This great difference showed that, for purposes of comparison, only such blossoms as were an average of forwardness, for the particular variety, should be taken.

2. The next comparison was, average blossoms taken from protected and unprotected situations of equal elevation, the protection being a hedge with Elm-trees, on the east or windward side of the plantation. Out of one hundred blossoms of each sort, the number of bad were as follows:—

	In the sheltered.	In the exposed situations.
Hessle	78	92
Louise Bonne, of Jersey	88	96
Williams' Bonchrétien..	82	88
Glou Morceau	20	19
Average	67	72

showing that the shelter named had on this occasion lessened the injurious effect of the frost about 12 per cent.

3. The third point examined was, whether varieties whose blossoms are equally forward are equally hardy. The result proved they were not. Thus, in blossoms equally developed, the trees being free from shelter, and on ground of nearly the same level:—

Beurré Diel had.....	68 bad in 100.
Fondante Van Mons	9 "
Doyenné d'Eté	18 "
Colmar d'Eté	42 "
Susette de Bavay	58 "
Easter Beurré.....	64 "
Williams' Bonchrétien	85 "

From these preliminary examinations, it appeared necessary, in investigating the relative amounts of injury done by frost at different heights, to compare only trees of the same variety, taking the average blossoms of each kind, and avoiding shelter. The result was as follows:—

	Height in feet above sea level.	Number of bad blossoms in 100.	Height in feet above sea level.	Number of bad blossoms in 100.
Colmar d'Eté	48	71	58	97
Doyenné d'Eté ..	43	quince stock	60	pear stock
		18		88
Marie Louise	56	19	100	82
Williams' Bonchré- tien	50	88	59	82
Do. on Quince	51	85	97	64
Louise Bonne of Jersey	48	92	51	92
Jargonelle	53	79	60	97

Average of the lower, 65 bad; of the higher, 86 bad.

These results are too conflicting to found any theory upon, but they show that elevated grounds are not always safest, as many fruit growers suppose. Perhaps fogs and dews, the assumed cause of the inferiority of low situations, were absent on this occasion, or prevailed as much or more on the higher ground. This point, however, was not observed.

5. The fifth subject of comparison was, the relative amount of injury sustained by the blossoms of several well-known varieties, growing at nearly the same height above sea level, viz., from 48 feet to 60 feet, shelter being avoided, and the average blossoms of each kind selected as before. The result gave the following number of bad blossoms in the 100:—

Fondante Van Mons	9 bad in 100
Beurré de Capiaumont	18 "
Doyenné d'Eté, on Quince	18 "
Marie Louise	19 "
Glou Morceau	19 "
Summer Franc Réal	36 "
Colmar d'Arenberg	42 "
Citron des Carmes	46 "
Soldat Laboureur	46 "
Beurré Bretonneau	55 "
Comte de Lamy	59 "
Van Mons Léon le Clere	62 "
Brougham	64 "
Orpheline d'Enghien	66 "
Beurré d'Amanlis ..	68 "
Passe Colmar	70 "
Colmar d'Arenberg	70 "
Colmar d'Eté	71 "
Duchesse d'Angoulême	74 "
Knight's Monarch	76 "
Susette de Bavay	78 "
Jargonelle	79 "
Easter Beurré	79 "
Hessle	85 "
Williams' Bonchrétien, on Quince	85 "
Ditto on Pear	88 "
Triomphe de Jodoigne	88 "
Doyenné d'Eté, on Pear	88 "
Napoléon	90 "
Louise Bonne of Jersey	92 "
Soldat d'Esperen	92 "
Vicar of Winkfield	92 "
Doyenné Gris	94 "
Beurré Diel	95 "

Discouraging as this was for many favourite kinds, I did not entirely despair of a crop. My trees were very small—only planted three or four years—so a few Pears on each would have been sufficient.

6. I found, sixthly, the number of blossoms on trees planted four years to average about

- 600 for Louise Bonne of Jersey (Quince)
- 200 for Williams' Bonchrétien (Pear)
- 500 for Beurré Diel (Quince)
- 300 for Beurré d'Amanlis (Quince)

which figures, after deducting the before-mentioned per centage of bad blossoms of each kind, left

- 48 good blossoms for a Louise Bonne of Jersey
- 24 " " Williams' Bonchrétien
- 25 " " Beurré Diel
- 96 " " Beurré d'Amanlis

more than sufficient for a crop on such young trees, if all arrived at maturity. — (*Transactions of the Pomological Society.*)

(To be continued.)

POTATOES GROWN IN IRELAND.

THE inclosed list of the different kinds of Potatoes grown in the South of Ireland may be acceptable:—Ash-leaf Kidneys (Walnut-leaved?), Ash-leaved, Baronets, Cumberland Kidneys, Crows, Coppers, Devonshires, English Reds, Forty-folds, Fox's Seedlings, Flukes, Green Tops, Golden's, Irish Apples, Kemps, Lumpers, Leather Coats, Minions, Nova Scotias, Orangemen, Pinks, Protestants, Rocks, Red Apples, Repealers, Scotch Downs, Scotch Apples, White Eyes, Wonders, Yorkshire Regents.

TO CORRESPONDENTS.

MANY CORRESPONDENTS must unavoidably remain unanswered until next week.

BOOK OF FARMING (C. B.).—We know of no small book upon the subjects you mention, but there are the large and expensive works by Mr. Morton and Mr. Stephens.

FRUITS FROM GUERNSEY (Cobo).—We are greatly obliged to you for the specimens sent. Those of *Benthamia fragifera* are remarkably fine; we never saw their equal. The *Beurre Diel* Pear is also very fine, and quite sustains the character which suggested the synonyme of *Beurre Magnifique*. *Beurre Royale* is also a synonyme of this variety, but *Beurre Diel* is the adopted name by all pomologists. The large Apple you sent is the *Golden Noble*, a very fine and useful fruit, and deserves to be extensively cultivated. The small, russet Apple, which you say is a seedling, is well worthy of preservation. It is of a very fine flavour and aroma, and will rank among our best dessert varieties. We regret to say the *Fuchsia* and *Geranium* were quite decayed and mouldy; perhaps you could send specimens again in a letter when they would come more speedily.

FRUIT-TREES FOR VARIOUS ASPECTS (G. G. G., Litchfield).—We do not exactly know what you mean by a north-east and west wall. If we are to understand by a north wall a *northern aspect*, we would advise you not to make use of it for Pears. There are one or two varieties which do succeed on such an aspect in the southern counties, but even there we certainly would not recommend any of our friends to make use of it. If by north wall you mean the north wall of your garden, and that you intended to plant the south side or aspect of it, we would advise the following varieties, taken from your list:—*Winter Bon Chrétien*, *Colmar*, *Brown Beurre*, *Crassanne*, *Bergamotte de Hollande*. On the eastern aspects—*Forelle*, *Marie Louise*, *Beurre Bosc*, *White Doyenne*, *Beurre d'Amanlis*, *Vicar of Winkfield*, *Knight's Monarch*, *Hacon's Incomparable*. For the western aspects—*Glout Morceau*, *Easter Beurre*, *Beurre de Rance*, *Napoleon*, *Nelis d'Hiver*, *Josephine de Malines*, *Passe Colmar*, *Ne Plus Meuris*. We should feel obliged to our readers if they would, in such cases, always speak of *aspects* instead of *walls*, and then we should know what they mean.

GRUBS UNDER AN ELM'S BARK (T. M. W.).—The small white grubs found under the bark of an Elm are those of the very injurious Elm Bark Beetle (*Scolytus destructor*). The sooner you strip off and burn the parts of the bark infested the better, for they will eventually kill the tree.

OUR NUMBERS AND VOLUMES (I. X. W.).—A new volume will commence with the first number in April. Our last volume (Vol. XVI.) commenced with No. 392, being the first number in April. Each volume, containing the numbers published during six months, begins either on the first Tuesday in October or the first Tuesday in April. You can get the *second edition* of THE COTTAGE GARDENER'S DICTIONARY at Messrs. Kent, Paternoster Row, London. We know of no work on British Plants such as you describe.

WEEDS ON CARRIAGE-DRIVE (Tauntoniensis).—Salt, to destroy these weeds, must be put thickly enough to cover the gravel. This kills the weeds; but, as soon as the rains and snows have washed the salt nearly all out of the gravel, the little salt remaining acts as a manure to future weeds. We mean to try coal-tar poured thinly over a similar drive, and spread over the entire surface by the aid of a brush; then to sprinkle a little fresh gravel over it and roll it.

TEMPERATURE OF A COOL ORCHID-HOUSE (O. S.).—In *Winter*, during the day, 55°, with sun; 50°, without sun; 50° at night, 45° in the morning. In *spring*, during the day, 70°, with sun; 65°, without sun; 60° at night; 55° in the morning.

BLACK FLY ON CHERRY (Scribo).—Destroy them with tobacco-water. The half of your Red Currants, which lost their leaves probably came from a moister soil than your own; those which did not lose their leaves probably came from one as dry. Manuring and mulching are the only applications likely to enable you to grow them.

HEATING BY GAS.—Vincent Litchfield, Esq., Surgeon, Twickenham, will be very pleased to give Mrs. Forrest any information in his power on this subject. In THE COTTAGE GARDENER'S DICTIONARY there are full directions for all the modes of propagating the *Mulberry*.

FANCY RABBITS (J. P.).—There are several Societies for their improvement, so you are not correct in your disparagement. Why is it more puerile to fancy a rabbit than a pigeon? We shall be very glad to hear the results of your experience.

NAMES OF PLANTS (Iota).—Your shrub is *Ruscus aculeatus*, or Butcher's Broom; it is not suited for making a hedge. Your Fern is *Lastrea dilatata*; it varies in form.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

CREWE. February 3rd and 4th, 1857. *Secs.* S. Sheppard and D. Margelts, Esqs. Entries close January 15th.

CRYSTAL PALACE. January 10th, 12th, 13th, and 14th. Grand Exhibition of Poultry, Pigeons, and Rabbits. Secretary to the Poultry Exhibition, William Houghton, Esq., Crystal Palace. Entries close December 13th.

ESSEX. At Colchester, December 31st, 1856, and 1st, 2nd, and 3rd of January, 1857. *Secs.*, G. E. Attwood and W. A. Warwick. Entries close December 17th.

KENDAL. At Kendal, February 6th and 7th, 1857. *Sec.* Mr. T. Atkinson.

LIVERPOOL. January 28th, 29th, and 30th, 1857. *Secs.* Gilbert W. Moss, Esq., and William C. Worrall, Esq., 6, Lower Castle-street. Entries close on the 10th of January.

NOTTINGHAM CENTRAL POULTRY ASSOCIATION. January 13, 14, and 15. *Hon. Sec.* Frank Bottom. *Secretary to the Canary Department,* Jno. Hetherington, jun., Sneinton.

PRESTON AND NORTH LANCASHIRE. January 21st and 22nd, 1857. *Sec.*, Ralph Leigh, Esq., 125, Church Street, Preston. Entries close December 13th.

SOUTH EAST HANTS. At Fareham, January 26th and 27th, 1857. *Sec.* Mr. James James. Entries close January 14th.

N.B.—*Secretaries will oblige us by sending early copies of their lists.*

POULTRY EXHIBITION RULES SHOULD BE ADHERED TO SCRUPULOUSLY.

As an individual who really feels desirous to promote the well-being of Poultry Exhibitions, perhaps you will excuse my present intrusion on your well-filled columns, to point out a failing in the "management" of such meetings that, of late, has been a very general one, and which my own experience in these matters tells me is gradually extending itself, calling very loudly as it does for exposure, and consequent revision and improvement.

I will at once refer to the really vital item to success, viz., the proper adjudication of the premiums generally. To carry this out truly and effectively two provisos are positively indispensable. They are an ample sufficiency of *day-light*, and, likewise, a sufficiency of *time* for this express purpose. If either or both of these conditions are unduly contracted, they must unavoidably and necessarily spread a very baneful influence on the whole proceeding.

I will, therefore, enter more minutely into the subject.

By general pre-arrangement there is almost universally, in the first instance, quite a sufficient time allotted for the proper fulfilment of this onerous duty; but, from after-misadventure of one kind or other, the time becomes eventually so seriously trespassed upon, that not unfrequently considerably less than a couple of hours is all that actually remains at the service of the Poultry Judges, whilst very unfortunately at this time of the year, like other troubles, proves twin-born, for the adjudications are thus unwarrantably deferred until closely approaching nightfall. Consistently with the small remnant of time thus given, how can the decisions then be made with certitude or satisfaction? I have so repeatedly been subjected to this grievous objection, that I will, without mentioning localities, at once give a couple of "illustrations."

Having consented to officiate at a Poultry Exhibition of very considerable importance, the time affixed by letter for my "commencement" of duty was 10 A.M.

The result proved, however, that no opportunity for so doing, even in any single class, actually occurred until twenty-two minutes to three in the afternoon!!! At four o'clock the lower pens were so absolutely obscured, that the poultry had, as a last resource, to be taken out by hand, and thus adjudicated; nor was it possible to discern the occupation or emptiness of such pens without testing them in the first instance by sundry preliminary pokings with a stick.

In the other case 9 A.M. was the fixture; and, so far as I was personally concerned, my appointed attendance was scrupulously fulfilled. To my utter discomfiture and astonishment, at that hour not a single pen was, as to erection, even commenced, and the following midnight was long passed by before any of my labours were available; and even then they were carried out *in toto* by two policemen's lanterns.

To the remonstrance of myself and my colleague, who "bolted and left me to it," the reply of the committee was,

"they were quite unprepared for the management of a Poultry Exhibition; it was their first attempt, and they would never try another." They never did; and, with such absolutely egregious insufficiency, it is very well it *has* proved to be so.

But permit me now very briefly to point out a cause or two invariably leading to these shortcomings. Frequently, in complete defiance of all printed regulations previously issued for the guidance of all parties, committees will "wait" for many hours after the appointed time for the anticipated arrival of pens of birds that, being, as it is technically termed, "entered," were naturally expected, although, as eventually proved, not forthcoming. Without the slightest qualification I assert, that this line of procedure is *absolute unfairness* to those owners of poultry who may have scrupulously obeyed the rules of the Society. The plea mostly urged for these delays is of this nature—"It will injure our Society to exclude them." Again, even when the hour for awarding the prizes is thus abridged, say the committee, "the fixed time for public admission cannot be postponed, for visitors must not be kept waiting, or our admission-monies will fall short."

I cannot forbear maintaining that the Poultry Judges have as undoubted a right to expect a proper arrangement for their duties as any one connected with the Society, whether visitors or committee, for on their final decisions how very much depends. But, to bring the matter into practical utility, it is always essential not only to point out a fault, but to suggest the remedy. I will attempt to do so.

All these inconveniences combined can undoubtedly be easily avoided by strict adherence to the printed regulations, and simple *punctuality alone*. I submit, if proprietors of pens of poultry will dally on to the last moment, and then leave it to the option of committees to receive them after the time publicly announced, such "whippers-in" ought to find their birds excluded, at least from *competition*; and it is also as decidedly imperative that everything connected with the Show ought to be perfectly finished, and quite ready for the reception of all poultry arriving in due time.

These are the trifles that, in the aggregate, constitute the difference between a well-conducted and a mismanaged Show of poultry.

Under arrangements properly preconcerted and faithfully carried out, none of these errors can possibly accumulate, and the true interests of all parties will be proportionably benefited.—EDWARD HEWITT.

PREVENTION OF FOWLS FLYING.

In previous numbers of THE COTTAGE GARDENER I detailed two methods of preventing fowls flying, one being the cutting the vane or beard off from the ten primary quill feathers of *one* wing, leaving the shafts their full length; the other the employment of a light lath, which, tied across the back, prevents the raising of the wings necessary to flight.

I also described the very efficacious method of preventing pigeons flying away by dipping a piece of soap in water, and passing it down the quills of *one* wing in the direction of their length.

Mr. Jones informs me that he found this plan so effectual with regard to pigeons that he has adopted it with fowls, and that he prefers it to any other mode of preventing them trespassing beyond their allotted boundary, it being perfectly efficacious even when adopted with the lighter and more active varieties, as Bantams, &c.

Thinking the hint may be useful I have forwarded it.—W. B. TEGETMEIER.

POULTRY EXHIBITION AT SOUTHWELL, NOTTINGHAMSHIRE.

THE fourth annual Meeting of this Society took place on Wednesday and Thursday, the 17th and 18th of December, and it gives us the greatest pleasure to state that, in point of perfection as to the poultry generally, the *improvement* over its predecessors was most manifest to every one.

The efforts of the Managing Committee are worthy of our

highest praise; they were alike indefatigable to secure the well-being of the valuable pens of poultry committed to their temporary care; and the courtesy displayed by every member of that body to the numerous inquiries of visitors was also well calculated to secure the final triumph of the undertaking. It is well here to acknowledge the promptitude, also, of the Honorary Secretary, Mr. R. Hawkesley, in replying in all instances, by the *return* post, to every written communication from exhibitors. In short, each member of the Committee tried every effort to please and accommodate all parties, and thus the success of the undertaking was assured. The weather at the late meeting was all the most interested could possibly desire, being a clear day, with a bright sunshine; consequently, the attendance of the aristocracy, and the ladies in particular, was far superior to that of last season, when one of the most inclement days that could be imagined marked its opening.

A great additional interest was caused by the strong competition for the possession of the Silver Cup for the best general collection. It eventually fell to the lot of J. R. Rodbard, Esq., of Aldwick Court, Langford, near Bristol, after a very close run indeed between that gentleman and Mr. Daft, of Halloughton, Southwell, Notts. We will mention a fact connected with this prize that may interest amateurs generally, and, at the same time, prove "the wind is indeed a bad one that blows evil to every one." Mr. E. H. Strange, of Ampthill, Beds, entered seven pens of poultry for general competition, and, from some at present unexplained cause, three pens only arrived at Southwell in time to enter the lists for prizes, the other *four* being delivered the following day; and, consequently, all these latter ones appeared before visitors bearing that "plague spot" to owners—"too late for competition." At the especial request of the Committee, the Judge, Mr. Edward Hewitt, of Eden Cottage, Sparkbrook, near Birmingham, reviewed these "late pens," to ascertain whether their non-arrival had caused any difference as to the Cup decision. The result of this reference proved that, had they been present and in time, Mr. Daft would have been the successful one by two points, whilst Mr. E. Strange, of course, lost high position on the prize-list in exact proportion, altogether independent of the actually pecuniary loss to the last-named gentleman.

The *Spanish* classes were well filled, and the birds were also of extreme excellence, whilst, as in the *Grey Dorking* classes, the chickens were undoubtedly entitled to pre-eminence, a very conclusive proof of gradual and certain improvement, the invariable result of judicious and careful breeding. In *Cochin-China* fowls the Partridge-feathered were the most excellent variety, followed by the White ones, and, lastly, the Buffs. These classes, particularly the last one, seemed to betray want of attention, and were not so good as we anticipated. All the *Game* classes were long-continued rows of perfect specimens, the very glory of the Exhibition, and the extreme pride of a large company of owners, who attended to witness what would be the final issue of the contest, as not a few had wagered considerable sums on the external excellence of their favourites. Even in this conflicting position we are happy to say the Judge's awards were approved, and all passed off most satisfactorily.

We were informed, too, on the spot, that considerable numbers of these truly beautiful and courageous birds would, in the course of a few weeks, meet as antagonists in an arena where neither they nor their owners would, probably, remain so social and unharmed. Nottinghamshire, for centuries proverbial for its *Game* fowls, thus maintained fully to the extreme its very high position. The "condition" of the *sixty-one* *Game* cocks, save only two, was unexampled, in fact, "impossible to improve;" but still, as amateur exhibitors *versus* cock fighters, we could not help feeling a momentary regret to imagine how soon the lustrous whalebone-like plumage of these beautiful birds would fall severed by the trimming scissors; and the eyes of specimens now rampant with defiance, and glistening in the full enjoyment of extreme health, become, at least in some instances, dull and flaccid from collisions in the cock-pit. From not a few of the lady visitors we heard similar exclamations of regret; but, having simply expressed our own sentiments, the enjoyments of others we leave to individual tastes and selection. In *Hamburghs*, whether Spangled or the Pencilled,

the *Golden* ones were very superior; not so the *Silver Hamburghs*, they being, together with the *Poland* classes, the very worst in the whole Exhibition. It is very long since we saw a more beautiful group of *Golden-spangled Hamburghs* than those of Mr. W. H. Swann, of Farnsfield, Notts. In the "any other distinct breed" class the *Malays* of H. D. Bayley, Esq., were triumphant, and well merited the distinction they attained. The same gentleman actually swept away all the *Bantam* prizes, save the one for *Blacks*, which fell, as last year at Southwell, and since at Birmingham, to the well-known collection of the persevering Secretary, Mr. Hawkesley, whose Black Bantams are becoming notorious for unvarying excellence. The *Geese*, *Turkeys*, and *Ducks* were superior.

It remains but to name that another season it is intended to place all the poultry exhibited under a covering of equal thickness, which will prevent any farther complaints of inequality of light, and will greatly improve the general appearance of the whole Exhibition; in fact, this is the only improvement on present arrangements that calls for particular allusion, and we are glad to find the Committee have determined on its adoption. We gave the prize-list last week.

DIARY FOR THE DAIRY, PIGGERY, AND POULTRY-YARD.

It will be seen, by an advertisement to-day, that this is just published, and we again recommend it to our readers. The Directory to more than 1000 breeders of prize poultry, and the kinds in which they most excel, is very useful.

Its author is a most active official of the Essex Poultry Show, and we are glad to hear that there are 500 pens entered for that Exhibition.

OUR LETTER BOX.

BRAHMA POOTRA COCK.—**RABBIT** (W. O. C. H.).—Your *Brahma Pootra* having only one eye, and your rabbit with bowed forelegs, would have little chance at an Exhibition.

THE HOUSEHOLD.

PRESERVING PRESERVE.—Fruit jellies may be preserved from mouldiness by covering the surface one-fourth of an inch deep with fine pulverised loaf sugar. Thus protected, they will keep, it is said, in good condition for ten years.

CALVES' HEAD HASH.—Boil the head three quarters of an hour, then put it into cold water, wash it, cut it in slices, pick out all the black; make a little beef gravy, flavoured with catsup; put the slices into it, and boil up well; make the brains into cakes with two eggs, beat fine, and the brains chopped small with a little parsley and a few bread crumbs, and some force-meat balls fired brown.

CUSTARD.—Put a pint of milk into a jug with the rind of a lemon, a few bitter almonds to flavour it, set it on the fire in a saucepan of boiling water. When sufficiently flavoured, sweeten to taste with lump sugar grated on lemon; beat the yolks of six eggs, the whites of three, stir them in the milk, set it on the fire again, keep stirring it till it is sufficiently thick. Stir it a few minutes after you take it from the fire. Add half a wine-glass of brandy.

GINGER BEER.—Two gallons of ginger beer may be made as follows:—Put two gallons of cold water into a pot upon the fire, add to it two ounces of good ginger, and two pounds of white or brown sugar. Let all this come to the boil, and continue boiling for half an hour. Then skim the liquor, and pour it into a jar or tub, along with one sliced lemon, and half an ounce of cream of tartar. When nearly cold put in a teacupful of yeast to cause the liquor to work. The beer is now made, and after it has worked for two days strain it and bottle it for use. Tie the corks down firmly.

WEEKLY CALENDAR.

D M	D W	JANUARY 6—12, 1857.	WEATHER NEAR LONDON IN 1856.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
6	TU	EPIPHANY. Twelfth Day.	29.310—29.174	48—35	E.	12	7 a. 8	5 a. 4	4 0	10	6 15	6
7	W	Bearsfoot (Helleborus).	29.066—28.970	47—37	N.E.	—	7	6	5 29	11	6 41	7
8	TH	Green Hellebore (Helleb.).	29.146—29.021	43—32	N.E.	02	7	8	6 50	12	7 6	8
9	F	Furze (Ulex).	29.204—29.158	38—34	N.E.	23	6	9	7 56	13	7 31	9
10	S	Germander (Veronica).	29.622—29.317	40—25	N.E.	—	5	11	rises.	☺	7 55	10
11	SUN	1 SUNDAY AFTER EPIPHANY.	30.071—29.786	36—28	N.E.	—	5	12	5 a 19	15	8 19	11
12	M	Crocus (C. vernus).	30.522—30.291	36—21	N.E.	—	4	13	6 41	16	8 42	12

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 41.0°, and 30.7°, respectively. The greatest heat, 54°, occurred on the 7th, in 1845; and the lowest cold, 6°, on the 8th, in 1841. During the period 111 days were fine, and on 85 rain fell.

POLYPO'DIUM VULGA'RE.



WITH but one exception botanists have never called this Fern by any other name than *Polypodium*, a name derived from two Greek words, *polys*, many, and *pous*, *podos*, a foot, and having reference, according to Theophrastus, to the resemblance borne by its numerous outlets to the feelers of the polypus. Mr. Newman alone has described it under the name of *Otenopteris vulgaris*. It is usually called the *Common Polypody*, *Polypody of the Oak*, and *Wall Fern*.

Root creeping horizontally, having very many stout, branched, somewhat woody, hairy rootlets; if left undisturbed becoming very much twisted and matted densely clothed with membranous, brown, narrow

toothed, pointed, shining scales. *Fronds* from six to eighteen inches high; lowest third of their stalk naked, grooved in front, and smooth; narrow spear-head-shaped, deeply cut into many segments, often nearly to the stalk; the segments parallel, slightly distant, narrow oblong, blunt, and flat; seldom quite entire, but often wavy and even toothed, especially at the end. Each segment has a zigzag, prominent mid-vein, from which lateral veins issue alternately. The lowest side-vein, and next to the mid-vein, exclusively bears at its end, if fertile, a mass of fructification. These masses of *fructification* are thus in a row, and mid-way between the mid-vein and margin of the segment; each of the other side-veins terminates in a little knob, which looks like an abortive mass of fructification. Each mass is circular; depressed at first, but becoming prominent; without any cover (*indusium*), and often running together when ripe. They are then shining, orange tawny coloured. The spores burst open when moistened. The upper part of each frond is usually fertile.

There are three varieties of this Fern found in the British Islands.

1. *Polypodium vulgare Cambricum*, or Common Welsh Polypody. It has a broad, somewhat egg-shaped frond, with the segments irregularly toothed, and always barren. Linnæus considered it a distinct species. This was first known as a British variety in 1686, being then mentioned by Ray in his *Historia Plantarum*. He says that he received it from Sir Hans Sloane, and that it was first discovered near Dennis Powis Castle, three miles from Cardiff, in Glamorganshire. It has since been found at Chepstow, in Monmouthshire, near Dundry Church, in the vicinity of Bristol, and at Braid Hall, near Edinburgh. *P. vulgare sinuatum* is a very slight variation of this.

2. *Polypodium vulgare serratum*, or Common toothed Polypody. The segments of this are very regularly, and often doubly toothed. It is first mentioned as a British variety in 1724 by Dillenius, in his edition of Ray's "Synopsis of British Plants." He says it was found on the walls of Windsor Castle by the Rev. Mr. Manningham. It has been found, also, near Bristol, in the Ashton Manor and Leigh Woods. *P. vulgare acutum* is a very slight variation of this, the segments being more pointed, and has been found on rocks in North Wales; in Cobham Park, Kent; and in meadows near Malden and Ewell, in Surrey. *P. vulgare Hibernicum* is another

sub-variety, the segments being more deeply cut and partly scalloped, found in the Dargle, in the county of Wicklow.

3. *Polypodium vulgare bifidum*, or Common forked Polypody. In this variety the end of each segment is forked or divided into two segments, spread away from each other. Sometimes the segments are divided into three lobes at the end, and it is then called *P. vulgare proliferum*. This variety has been found in a wood near Bingley, in Yorkshire, and at Chepstow, in Monmouthshire.

Many other sub-varieties might be mentioned, but they all pass by various gradations into one another, and we do not believe that any one of the varieties is permanent. Cultivation, we think, would reduce them all to the form of the original species. This species is common throughout the British Islands on old walls, old roofs of cottages, shady banks, and trunks of old trees.

The first botanical writer who mentions this as an English Fern is Dr. William Turner. In the second part of his "Herbal," published in 1562, he gives a very fair woodcut of this plant, and speaks of it as the "Englishe Polypody," "Wall Ferne," and "Oke Ferne." Lyte and Gerarde copied Turner's woodcut. They all dwell upon the medical qualities of this Fern; but, although Dioscorides did so before them, it is only thereby demonstrated to be an error so much the older. They recommended it as a cathartic; but Dr. Woodville correctly observes, "Another character in which it has been recommended, and for which, from its sensible qualities, it seems to promise more advantage, is that of a demulcent or pectoral; thus conjoined with liquorice its good effects have been experienced in coughs and asthmatic affections. However, it is now rarely used in this country, nor have the French authors, Poissoner and Malouin, who have cited instances of its success in mania, been able to restore to it its ancient reputation in this calamitous disorder."

The root, which is the part medically made use of, has a peculiar bitterish-sweet taste when fresh. It has been analysed by M. Desfosses, who found in it a sweet substance resembling sarcocollin, mannite, incrustable sugar, starch, albumen, malic acid, lime, magnesia, and oxide of lime. M. Planche also found in it viscin, which is more popularly known as bird-lime.

Mr. W. Reeve is a great admirer of this species. He says, "The most distinct, the most generally known, and, perhaps, the most ornamental of all the *Polypodiums* is *vulgare*. It is a very handsome and useful Fern, and well adapted for cultivating upon the Fernery or rockery, or for adorning any out-of-the-way place. It is so well known, and so easily managed, that little need be said of its culture. The more elevated parts of the rockwork will be most suitable for it, and the shady parts in preference to the more exposed parts, although it will bear a moderate degree of exposure to light when once established. It particularly delights in the decaying trunks of old trees, so that these should be introduced in forming the rockery, and the plants fixed upon them by

filling the crevices with fine leaf-mould, peat, and sand, and fixing the main root of the Fern upon this compost early in the spring; or it may be planted in other parts of the rockery in the above-mentioned compost, with a free admixture of sand. It requires only a moderate supply of water, and must be well drained. It is as hardy as any of the species, but will, if protected a little, remain green all the winter. If exposed to severe frost the fronds become brown and die off. It will grow very well in pots or pans with a good drainage, and in the above-named compost. It will grow, also, in the greenhouse, where it forms a very pretty object, and becomes evergreen. It may be easily propagated by division, which must be done in the spring."

EXOTIC NURSERY, KING'S ROAD, LONDON.

(Continued from page 198.)

THE house for hothouse Ferns is of the same length as the last house, forty-five feet. There are no rafters to the roof, the sash-bars being two inches and a half deep, and fourteen inches apart, north aspect, and the temperature for the winter months fluctuates from 60° to 70°. You could not call it a damp house, but just comfortably so, enough to render the air pleasant, and all the plants seemed to like that particular degree. There were very great numbers and numerous kinds, and many were quite young amongst them. I only notice the most prominent plants as they "struck my eye," and I begin with the Scythian Lamb, the *Cibotium Barometz* and *Schiedei*. The down on the creeping root-stocks of these Ferns, and on the bottom of the leaf-stalks, or rachis, of several other Ferns, is like lambs' wool; and I have since heard of an awful destruction of such Ferns to get at this wool in the Cannibal Islands, or somewhere in that direction, for stuffing beds and pillows for the gold merchants of California, who paid high for the luxury; and I have read in a scientific journal, from which I should have expected better information, that *Cibotium Schiedei* was one of the kinds of Ferns which were so destroyed, although it is a native of Mexico, and does not grow in those islands. The geography of this one island of Great Britain is a mystery to one half of the London editors, and the geographical distribution of plants is an equal puzzle for many honest men who ought to be better schoolmasters. The next was *Diplazium arborescens*, which was new to me; *Pteris aspericaulis*; *Marattia laxa*, very strong, and *cicutafolia* ditto; *Asplenium diversifolium*, *Nephrolepis Davallioides*, *Polypodium (Goniophlebium) menisciifolium*, *Cheilanthes tenuifolia*, *viscosa*, *brachypes*, and *elegans*, all of them very elegant Ferns; also, *C. Alabamensis* and *tomentosa*; *Nothoclæna nivea* and *chrysophylla*; *Gleichenia microphylla*, one of the prettiest of Ferns: it was exhibited for the first time by Mr. Veitch, at the Crystal Palace, in 1855, when it was noticed as a great rarity; and *Gleichenia flabellata*, which seems a great favourite here, being used as a furnisher in several places; also, *G. dicarpa*, *Lomaria nuda* and *attenuata*, *Davallia Nova-Zeylanica*, and *Aspidium macrophyllum*; *Oleandra hirtella*, a tree-like Fern; *Gymnogramma Peruviana argyrophylla*, which is the true name of the Dusty Miller Fern, which was at the last Show of the Crystal Palace; but *Peruviana* may be dropped to save one's breath, and *Gymnogramma argyrophylla* is quite long enough for all conscience except that of a Fern botanist, if in truth he has any conscience at all; also, all the kinds of golden and silvery under-leaf Gymnograms, *Polystichum mucronatum*,

Pteris arguta, fine, *geranifolia*, *Stenozemia aurita*, *Hemidictyon marginalis*, *Platyloma calomelanos*, *Lycopodium delicatissimum*, *Leucostegia* (*Davallia*) *chærophylla*, *Platycerium grande*, and *Drynaria quercifolia*.

Now, these are such as could not fail to catch the eye of any one not much versed with Ferns like the reviewer. For the last few years the names of Ferns were in a transition state, but now we have a standard authority for them in the new Catalogue of the collector at Kew by Mr. Smith, the curator there, who has devoted a lifetime particularly to the study of this elegant tribe of plants. I am indebted to the author for an early copy of this Catalogue, which is not on sale, but which any collector may procure by application to Mr. Smith, with a view of exchanging Ferns. Nurserymen ought to make themselves masters of this extensive list, and square their own lists of Ferns with it in their next catalogues. The best, and by far the best nursery catalogue of Ferns which has been sent to me is that from Mr. Sim, of Foot's Cray, Kent; it is a priced and descriptive list, full of practical directions about them. I am also under obligations to Mr. Smith for valuable instructions about the revised sections and genera in his Catalogue, and I may almost say that I have begun to study Ferns at last. Indeed, I do not see how otherwise to help myself; they are constantly in my path, and one hardly fancies having to be always asking about them, and boring other people to spare one's own brains. Moreover, I am still further indebted to Mr. Smith for a most favourable introduction to Dr. J. D. Hooker, who I think will be Humboldt the Second, and who, I am most happy to say, I found as anxious to learn about bedding-out plants as if he was brought up at Shrubland Park itself. Now we shall have the highest philosophy on our side, as well as the highest ladies in the land, Dr. Hooker being an associate with Sir W. J. Hooker, his father, in the Directorship of the National Gardens at Kew. I had the advice of Sir W. J. Hooker to carry on garden experiments when Dr. J. D. Hooker was in long clothes; and, after many a night's "entertainment" from his able pen, I have at last found access to himself, of which I shall gladly avail myself whenever I get into a fix botanical.

But to the Ferns in the Exotic. My guide now opened a door, and we were full in the open air, over head and ears in Ferns again, rocks and valleys, mountain-sides and open plains, full of them in all directions; arrangements for temporary shelters for them in hard weather; but I left them with a promise to call some other day, and plunged into the depths of the Orchid-houses, taking the *Dendrobium*-house first, a span-roofed house, seventy feet long, with a flat stage along the centre, and a side, flat stage all round; also hooks and eyes to hang "*Dendrobiums*" from the roof. The winter heat here is 65°, and the whole house was as dry as an ordinary conservatory in the country. Indeed, it would surprise many of the country gardeners to see how dry Mr. Veitch keeps all his Orchids in winter. You could not damp a cambric pocket-handkerchief with all the wet which was in all his houses of them, in the three principal ones at least. That for *Cattleyas* stands across from the end of this, and the *Vanda*, and *Aërides*, and such-like plants house, which corresponds with this one for *Dendrobes* and their allies. The paths, the shelves, most of the pots, blocks, stems, roots, and leaves, did not seem to me to have had a drop of water over them for the last ten days, and Mr. Veitch told me that he keeps them equally dry the whole winter; but I am quite sure the same degree of dryness could not be kept up with impunity in most houses that I know, and I could see the reason for the difference with one eye. Mr. Veitch has been so long importing these plants, and getting rid of the young and small fry as soon as possible, that his immense collection

of Orchids may be said to consist entirely of plants fully established, and such plants take to grow and go to rest just as naturally, at the turn of the seasons, as if they were British plants; and, as his plan is successful beyond question, it would imply that a private grower should keep all his specimen plants in one dry house, and his nursing-plants, that is, all the young stock, in a small damp house during the winter.

Mr. Veitch's *Cattleya*-house corresponds with the intermediate house or cool house of the amateur, only that he keeps it 5° warmer. Even in this *Dendrobe*-house at least one-third of the plants are usually kept 5° lower than they are with him; but read the following names of some of the rarest, and others of the most prominent, objects in this house, and judge between us. All I can say is, that I never saw any collection of Orchids so uniformly healthy as this is, and I have known all the best collections within many miles of London for the last quarter of a century. I saw the first *Aërides affinis* in bloom, which opened up that class of flowers in England. At that time the garden of the Horticultural Society was the best place for them in London.

Let us take the *Dendrobiums* first, and begin with *Farmeri*, several of it two feet long; *D. albo-sanguineum*, *Dalhousianum*, tortile, *chrysotoxum*, with bulb-like *Lælia superbiens*; *D. aggregatum major*, *formosum*, *Devonianum*, *onosmum*, and *macrophyllum major*, or *giganteum* (this is the newer kind of the strong Rhubarb-smelling one, moniliforme); *Cambridgeanum* (Paxton), and *ochreatum* (Lindley), and *Pierardia latifolium*, suspended; *Trichopilium suavis* and *coccineum*, eighteen inches across; *Oncidium papilio*, with twenty-two flower-spikes, and two feet across; *Calanthe vestita*, many specimens, and just pushing out the buds of their flower-stems (1st Nov.). Mr. Jackson and Mr. Woolly had them in bloom that day. *Oncidium ampliatus major*, three feet in diameter; *O. incurvum* in bloom, with upright-branching spikes three to four feet long, and lilac and white flowers in abundance; *O. oblongatum* and *angulatum*, the latter in bloom, with long-branched spikes; *Odontoglossum nebulosum* in bloom, and *citrosimum*, eighteen inches across; *Cypripedium villosum*, eighteen inches across; *C. barbatum superbum* in seed, the pods not unlike a *Chili Capsicum*; *C. caudatum* and *Lowi*, both very fine; *Europedium Lindenianum*; two fine *Chysis bractescens*, and large specimens of *C. aurea*; *Sophronis grandiflora* in flower; *Ansellia Africana*, very strong, and some of the stems being five feet in length; *Angræcum virens* and *suavis*, suspended; *Cymbidium eburneum*, very fine and healthy, with *Anguloa Miltonia*, and a host of other such-like genera, and all under the same treatment as the whole family of *Dendrobiums*, and full-grown specimens of almost all the kinds, and so arranged, as to heights, that every one of them might be judged from the paths.

CATLEYA HOUSE.—This is a large, wide house, with a front stage, and all the back in one sloping stage. Some of the specimens here are enormous, and are perfect pictures of health and cleanliness. They are kept equally dry as in the last house, and 5° cooler, that is, 60° for the greatest fire heat; and the kinds which are mixed with *Cattleyas* are such as *Lælia Perrinii* and its variety *Pallida*, both in bloom; also a kind called *Leopoldi*. The original *Lælia purpurata* is now two feet across, a splendid thing. *Brassavola Digbyana*, and others of that stamp, the *Cattleyas* themselves being beyond anything I ever saw when thus grouped together. *Skinneri* is a full yard across; '*crispa superba*, thirty inches ditto; several *Mossiae* two feet across; the largest *Aclandiae* I ever saw on blocks and in baskets, with *Bulbosa*, another alpine kind; also *Citrina, reversed*, that is, with the roots up against the roof, and the bulbs and leaves hanging down perpendicularly, or nearly so. This squares with the Messrs.

Jackson's system of keeping it more dry than any of the rest. Last of all, *Cattleya lobata* is a fit match for *Lælia superbiens* itself.

EAST INDIA HOUSE.—There are two rules for taking a party over a garden, which, if violated in any one instance, will do infinite harm in respect to the best effect. The first is *never, never* to take strangers over your garden *against the sun*. It is worse than throwing dust in their eyes if there is an "eye" amongst them; and the second rule is, to be sure not to let strangers see the best parts of the garden first. Take them to *moderado* first, then let each turn reveal a better scene than the last, and let the last itself be the grand climax. As long as they live, if they are worthy to live on gardening, they will never forget the good impression. That was the way I was brought to the East India house, and, if ever I shall forget that first impression, I shall forget my ancient lineage, on which I pride myself so much. This house is seventy feet long, and from twenty to twenty-five wide, with a flat front stage all round, and a flat stage all down the middle. Every pot in the side row is exactly of the same size and shape, and there are five rows of pots on the centre stage, the centre row being of the largest specimens, rising in regular gradations from either end to the centre, and the side rows follow them from both ends, and also up the side slopes. The whole is perfect. On one side there hangs from each rafter a moderate plant of *Phalænopsis* on a block. All the blocks and plants are as much of a size as if the whole went through the same mould, and they stand as true in the line as an "eye" could tell, and on the other side of the house various kinds make up nearly a similar line. With the exception of this fraction of various kinds, the whole space is filled with *Vandas*, *Aërides*, *Saccolabiums*, and *Phalænopsis*, all as dry as the last two houses, and standing at 75° of fire heat, be the weather ever so cold. The representatives of the Rajah of Sarawak (Brookii), of Lady Larpent (Larpentæ), of Mr. Schroeder, Dr. Lindley, Mr. Lobb, and Mr. Veitch, the good man of the house, are conspicuous objects in the first genus which meets the eye here, namely, *Aërides*; and you might think they are all hot from the chase, for there is the "Fox-brush" to attest the fact, and such a "Brush!" This species of *Aërides* came originally from the Loddiges' collection, and, I believe, will be called Fieldingi some day or other. The newest plant in this house is a noble kind of *Vanda*, recently received from Mr. Lobb, and called *Gigantea*. The dried flower-shoots were from fifteen to twenty inches long, and small pieces of it have been sold already for twenty guineas. There are several large specimens of it growing away from the centre vigorously. *Aërides maculosum*, *Lobbi*, and *Veitchi* are all noble plants, as are *Schroederi*, *quinquevulnerum*, with eighteen flower-spikes, four and a half feet high, and three feet across; *Virens*, four feet by four feet; *Larpentæ*, equally fine; and *Crispum*, magnificent; *Lindleyana*, with very dark purple stems, and flowers in the way of *Schroederi*; *Suavissima*, affine, three feet by three feet; *Purpurascens*, like *Odoratum major*, with long spikes of purple flowers; *Saccolabium Blumei*, four feet high, with twenty-eight flower-spikes; and *Blumei major*, with guttatum, præmorsum, furcatum, retusum, ampullaceum, miniatum, with nine-inch spikes of orange scarlet flowers; *Curvifolium*, equally fine; *Vanda suavis*, vera, tricolor, and its many varieties; *Batemanni*, *Lowei*, with long wavy leaves; *cærulescens*, *cristata*, *teres*, *Roxburghii*, and *R. cærulea*; *Angræcum sesquipetalis*, from Madagascar, very rare and very distinct, with broad wavy leaves, and just then showing for bloom. It produced one large white blossom last year finer than any of the rest of them; it was introduced by the Rev. Mr. Ellis, with the Water Yam, *Ouvirandra fenestralis*. A

magnificent specimen of *Angræcum eburneum* and *caudatum*, and *apiculatum* was in full bloom on a block hanging from the rafters; *Phalænopsis amabilis*, *grandiflorum*, and *roseum* in great numbers; but why follow the list, when the whole were specimens only a few years back? Such are the Ferns and such the Orchids at the Exotic Nursery; such, also, the new contrivance for Wardian cases, and the uniform mode of heating Orchids from long voyages in a low, steady temperature; and, lastly, such is the fact, that those Orchids which are fully established may be kept over the winter quite as dry as any other stove plants. All the pots for Orchids have their sides pierced all round with holes about an inch in diameter, and as close together as they could be made; enormous drainage is put in, but the plants are not much above the surface of the pots. When the plants have advanced well into growth in the spring the heat is gradually raised; and more moisture is kept up, till, at last, the heat and moisture are enormous to think of, when the houses are shut up on an afternoon in May, June, and July.

D. BEATON.

WINDOW GARDENING FOR THE WINTER.

(Continued from page 218.)

IN speaking of the importance of *cleanliness* I omitted to state how important it is to prevent the leaves being crusted with the fine dust which will accumulate in sitting and living rooms, even though the boots and shoes of the possessors do not come so much in contact with mud and earth as those of gardeners generally do. The most effectual mode of preserving the leaves of plants from this almost impalpable dust, sure to be raised at every cleaning process, is either to move the plants out of the room before it commences, or to cover them over with a cloth, through which the dust will not penetrate. If the plants are kept on a stand, a hoop or a couple of hoops over it would render this preventive an easy matter. For want of such means to prevent the leaves being encrusted with fine dust many a window plant is a silent reproach to its possessor, speaking alike of ignorance and carelessness.

6. POSITION.—I have already alluded to aspect. Unless in sudden changes from cloud to sunshine, or when it may be desirable to keep a plant a little longer in bloom, when a shadier place for a short time would do, it is necessary to keep the plants during the day as near to the glass and light as convenient. When the plants are low in stature the stand may extend from four to six feet into the room, and yet the rays of light will fall upon them rather directly. The taller the plants, therefore, the fewer of them can be well accommodated in sitting rooms. That, of course, will partly depend upon the height and the width of the windows. I have seen hundreds of small plants, from six to nine inches in height, doing well on a large table opposite a window six feet by four, and with an eastern aspect. Six or eight plants, from two feet and a half to four feet in height, would have been as many as that window could have done justice to. I am sometimes privileged to see beautiful plants standing on a lady's work-table in the centre of the parlour, and sometimes the question is asked, Why such plants thrive so badly? A young lady once drew a comparison between such miserable table-plants and the poor Cretins in the Swiss Valleys, and I believe she was pretty near the mark, the want of direct sunshine having something to do with both. Plants that are grown merely to bloom, and then to be thrown away, may be placed on such tables, and even on chimney-pieces, as some of our friends do, and any plant may be placed in the centre of a room by day for a short period; but, as a general

rule, the nearer plants are kept to the windows in winter the better they will thrive; that is to say, when such a position would not be too cold for them in severe frost. In such a case they should be moved more to the centre or the side of the room for security. It is advisable to have a small thermometer to regulate these matters. If the heat ranges from 37° to 45° , and onwards to 50° , the plants should remain near the window, unless exposed to draughts of air, some 10° or 15° below freezing, from the frequent openings of doors near them. They will be safe enough in the same place at night if there are only a few degrees of frost out of doors, and there are shutters to the window. Whenever there is danger, from a severe frost, that the plants in the window will descend in temperature below 35° , they should be moved to the centre of the room, and in extreme cases a cloth should be placed over them there. This precaution is more necessary where rooms are kept too warm in an evening to be good either for plants or its human residents. The higher the temperature of the room is kept, the more subject will all concerned be to suffer from cold. If near the cosy fire-place the temperature generally ranges from 50° to 60° , the plants near the window will just be in their element, because the average there will be about 45° in the evening. No directions here will ever supply the want of close attention and care of the window gardener. Whenever it is necessary to remove the plants from the window at night, or in extra severe cases during the day, care should be taken to submit them to no higher temperature than will just keep them safe, as every extension of growth in shade is made at the expense of the organised matter the plant formerly contained, so that merely lengthening in such a case is not addition or real growth. In very severe frost a little fire may be left in the grate; but with the precautions named this will seldom be necessary if the windows are furnished with shutters.

7. VENTILATION.—This is one of the most difficult things to manage in winter in sitting-rooms—people are rightly so frightened about draughts. Upon the whole the plants are likely to be as well off as the human residents. They will get a whiff of fresh air from crannies in the windows, and from frequent openings of the door during the day, and circulation of air will be promoted by the draught in the chimney, the rarefaction being partly supplied by sucking all that can be got through crevices and key-holes. The long winter evenings are the periods when plants, and men too, suffer most for want of fresh air. In a greenhouse, though pretty close at night, the air is moister than in a sitting-room, and purer, because no fire has been using up its oxygen. Our own feelings in such circumstances would tell us what the plants wanted as well as ourselves. Much of the nausea, head-aches, &c., the results of attending crowded assemblies, are owing to our disregarding the lessons which such feelings should teach. I lately attended a missionary meeting, where standing room was out of the question. It was a perfect jam. One gentleman, on rising to speak, said he always liked to see the candles burn brightly, and to have a good view of the faces of his audience, and recommended the door and windows to be fully opened for a few minutes. The pent-up exhalations rushed out as from a steam-engine, and every one looked as much as to say, "How comfortable that has made me!" I found out afterwards that this gentleman was passionately fond of plants, and cultivated them successfully amid many drawbacks. In these long winter evenings both we and our plants would be much improved by a thorough change of the atmosphere around us. Only let the fire burn brightly, the doors be all as close as possible, and we thus as cosy as cosiness can make us, and, whatever our employment, in a few hours we shall become

hipped and lethargic, and very likely half inclined to be drowsy. And what is the antidotal charm, more powerful than every attendant of Bacchus, with the chieftain of jollity and revelry at their head? Why, simply a good whiff of pure, unadulterated air. The gentleman at the meeting knew how to do this most effectually and safely. Pull a window down a few inches, open a door ditto, and you create a draught that might be dangerous to the person near it. Throw the door wide open, if not the window, and every one is prepared, and the whole atmosphere is changed in a few minutes without the dangers of draught. In most cases this can be sufficiently done without opening the outer door; but if that is necessary, and the air is frosty, the plants should be screened, so as not to be acted upon at once by it before it has been partly warmed. All sudden extremes should be avoided. I have already alluded to

8. TEMPERATURE.—The best average may be considered 45° , allowing a fall of from 5° to 8° at night, and a rise of from 5° to 12° during the day. If much below that average the plants will neither bloom nor grow freely; if much above it the plants will be weak and drawn.

R. FISH.

(To be continued.)

WARDIAN CASES.

SEVERAL correspondents having made inquiries about the management of these interesting Lilliputian green-houses, and the last being just received from a fair correspondent under the cognomen "ANNAH," I will try to give a concise essay on the subject. They are certainly interesting objects anywhere, but more especially in large towns and cities. In such positions the plants in the close case seem to be sheltered, in a great measure, from the deleterious atmosphere, and thrive in spite, as it were, of such disadvantageous circumstances. The notion, however, that generally prevails, that after planting they require no further care, is quite fallacious. Common sense would at once point out to an observing mind that, if a number of small plants are put into a confined space, the air would soon become vitiated, the same as it would in a small room filled with animals. The plants would then, of necessity, become sickly and perish; and, again, if they did grow well, the stronger and larger-growing species would soon outgrow the other and choke them. Mr. Ward, indeed, seems to think that no giving of air, in the ordinary understanding of the term, is necessary; but from what I have observed in dozens of cases where no air was given, the greater part of the plants perished in, at the utmost period, a twelvemonth after planting. Many of the leaves moulded off, and the plants died in three months. Facts are stubborn things. If no air was necessary in those close cases why did the plants die? On the contrary, small cases, not more than eighteen inches wide and as much high, have had the plants in them as fresh, green, and healthy as possible for double that time; but then there was a contrivance for the vitiated air to escape and fresh air to be admitted. It may be that in large Wardian cases, such as that figured in *The Gardeners' Magazine of Botany* for 1851, at page 149, such an air-giving contrivance might not be necessary. The larger space, and, consequently, the many fissures unavoidable in such a building, would admit pure air, and allow sickly, gaseous vapours to escape. The author of the report on that house, or case, as he pleases to call it, says, "Open exposure to air is very seldom required with the majority of plants, whether natives of cold or of hot regions, if their wants are duly supplied." Observe the latter part of the sentence, "if their wants are duly supplied." Truly we should have been glad had the means of supplying

their wants been described. I think he would have been obliged to confess that fresh air was one want requiring a daily supply.

If any plants at all would exist in a close atmosphere it would be the Orchideæ; yet, in my long experience of their culture, I always found them thrive better, flower more freely and with brighter colour, when a measure of fresh air was admitted every mild day, whether the season was winter or summer. The manner of admitting this fresh air is a different matter. It should never be allowed to blow directly amongst the plants. The only species of plants that I can conceive will thrive in a close case are Mosses; but they must be placed in such a position that the sun should scarcely ever shine upon them. A friend of mine, now no more, once attempted their culture in a lean-to house behind a north wall, and succeeded very well; but even here he allowed the door to stand open an hour or two every day. I wish I had a case similarly situated; I would try to cultivate that delicately beautiful but neglected tribe.

With these few somewhat rambling remarks and ideas I must return to the main object of my present writing, namely, the management of Wardian cases, by which term I mean such as "ANNAH" describes having noticed in No. 426 of THE COTTAGE GARDENER, and also some of a larger size, so as to meet the wishes of other correspondents. "ANNAH" wishes to know the soil, manner of planting, and the kinds of Ferns suitable for a small case. I will undertake her *case* first, dividing my subject nearly as she has done, namely, 1st, Soil; 2nd, Situation; 3rd, Planting; 4th, Management; 5th, List of Ferns suitable for a small case.

1st, SOIL.—Any curious observer of such matters, who has had the opportunity of seeing Ferns growing in a wild state, must have noted that a great number of kinds grow on rocks on the north side, or that side least exposed to the sun, or else in shady woods. It is true there are some that grow in swampy places, and others in shady thickets, but very few in exposed places. Now, if we wish to succeed in bringing these wild denizens under cultivation, it is needful to imitate the soil in which they grow; therefore let me advise "ANNAH" and others to first procure some peaty soil, such as Heaths grow in, and also some turfy loam and a few broken, sandy stones, or even pumice stone; beat the peat and sift out the finer particles; then mix that, the loam, and the stones together, and fill the case nearly full of this mixture or compost, first placing a thin layer of broken pots at the bottom; the case is then ready to receive the Ferns. Observe this, however, first—choose a few of the most picturesque-looking stones: pumice stone is always so. These are intended to place on the surface of the soil amongst the Ferns, and may be so placed as to represent tiny rocks; they serve, also, to keep the soil moist, thus avoiding the necessity of frequent waterings.

2nd, SITUATION.—The best situation for a Wardian case filled with Ferns is to place it on a stand near to a window facing the morning sun. The afternoon sun, however, would answer nearly as well. I have no notion of growing even Ferns in the dark. I have always found two or three hours of sunshine of advantage, especially for giving them a full, dark green colour, and drying the damp moisture of the glass.

3rd, PLANTING.—Having fixed upon a suitable position, and procured a proper stand for the case, you may then proceed to put in the plants. The bottom of the case and its glass cover should always be in two distinct divisions, so that the former can be filled and planted more conveniently. I have had cases to fill where I had only a small door to admit the plants and my hands to plant them—a task of considerable difficulty. Now, however, I believe all such cases are made to have the bed to contain the earth and plants and the cover separately. I suppose the plants to be healthy and young,

and in small pots. The planter should know which are the tallest growers, and which are dwarf or low in habit. For small cases three rows will be ample; the centre one should contain such Ferns as are tall, and the two side rows those of low growth. I generally set the plants in their places in their pots agreeably to the above regulation; then remove the plants on one side row, and plant the centre row, keeping that row rather elevated above the side ones. When the first row is planted then place a few of the stones among them. If variety of surface is desired, that may be obtained by so placing the tiny rocks as to give an irregular surface. When this first or centre row is finished planting, then plant the row that had been removed to allow room to plant the first one. Arrange the stones as the work proceeds, and then plant the last row, leaving all neat and tidy. If you choose, you may place among the plants some light-coloured shells or pieces of spar. If judiciously done, such things give a variety of colour that is always pleasing.

When all is finished give a good watering to thoroughly wet and settle the soil; stones, shells, &c., in their places; then allow a little time for the foliage and surface of the soil to become dry, and after that has occurred place on the cover or glass top. If the case is a round one put a tallish-growing sort in the centre, and surround it with the smaller species.

4th, MANAGEMENT.—I wrote above somewhat strongly in favour of giving air. A contrivance to allow that should always be adopted. As soon as the glass cover is put on, the inner surface will be covered with dewy moisture, completely shading the plants from being seen. This may be allowed for a few days, until the plants begin to push new roots. After that air must be given to allow the moisture to evaporate. If the inside can be wiped dry occasionally it will be of service. When the superfluous moisture on the surface of the soil is evaporated this deposit of moisture on the glass will be much diminished; then rather less air in cold weather may be given.

As the soil will in time become dry it should be then watered; but I would always recommend the glass top, if possible, to be removed when the watering is done, and kept off for an hour or two till the leaves are dry. Excessive moisture is sure to cause mouldiness to appear on the older and even very young foliage, which is always injurious, and spreads rapidly if not checked by a drier atmosphere. On this rock many a cultivator of plants in Wardian cases has struck, and thereby ruined his plants.

Another point is, to be on the look out constantly for any decaying matter, such as leaves and moss, and to remove it instantly to prevent infection. Also, if any plant dies from any known or unknown cause, let its place be filled up with a young, healthy plant of the same species, or one of similar habit. Many species are deciduous, that is, lose their leaves in the cold season. Such should have their old fronds cut down the moment they begin to turn yellow. Decaying leaves in such a confined space are injurious to the evergreen species, the decaying matter giving out an effluvia or gas that is almost death to living plants in a very short time. I need scarcely mention that no weeds should be allowed to exist in the case; they should be plucked up carefully as soon as they appear.

RENEWING THE PLANTS.—However carefully a Wardian case is managed, a time will come when it will be necessary to take up all the plants that may be living, and to remove the old soil. Then is a good opportunity for cleaning and painting, and doing any slight repairs that may be needful to the case. A few fresh plants, also, should be procured and planted. This renewal will be necessary about every third year.

The above instructions are meant chiefly for a small Wardian case; but the same points of culture apply to

the larger ones, that is, with regard to the soil, situation, and management. A large case, however, affords means and space for a greater variety, not only of Ferns, but also in arrangement and other species of plants that may be introduced. In a case four feet long, three feet wide, and three feet high, there is space for one or two small rockeries; also for suspending plants from the roof. If I were giving an order for such a case, I would order both sides to be so made as to be taken entirely out, in order to afford an easy access to the plants to perform any operation needful for their welfare. The suspending plants would occasionally require their balls to be dipped into water, which should always be rather warmer than the air. Such plants should invariably be allowed to hang up in a place clear of the case, to drip off the superfluous water previously to being replaced in the case.

The following is a list of Ferns suitable

FOR A SMALL WARDIAN CASE.

First row.—*Adiantum affine*, *A. assimile*, *A. cuneatum*.
Centre row.—*Adiantum formosum*, *Asplenium bulbiferum*, *Cassebeera hastata*. Third row.—*Asplenium ebeneum*, *Cheilanthes profusa*, *Doodia aspera*.

If there is more room than these nine will fill, I would recommend the space to be filled up with *Lycopodiums*, namely, *L. cuspidata*, *L. densa*, *L. denticulata*, *L. Mertensii*, *L. stoloniferum*, and *L. Willdenovii*.

FOR A LARGE WARDIAN CASE.

Ferns (dwarf).—*Adiantum concinnum*, *A. cuneatum*, *A. hispidulum*, *Asplenium odontites*, *A. obtusatum*, *Davallia pulchella*, *Polypodium repens*, *Lomaria nuda*.

Ferns (taller).—*Adiantum formosum*, *Asplenium bulbiferum*, *Davallia Canariensis*, *Goniophlebium sepultum*, *Gymnogramma calomelanos*, *Lastræa decomposita*, *Onychium lucidum*, *Polystichum falcinellum*, *Pteris vespertilionis*, with a few *Lycopodiums* intermixed.

SUSPENDING PLANTS FOR A LARGE WARDIAN CASE.

Æschynanthus pulchra major, *Hoya bella*, *Torenia Asiatica*,* *Cereus fragelliformis*, *C. Mallisonii*, *Mesembryanthemum barbatum*, *M. floribundum*, *M. inclaudentis*, *M. rubrocinctum*.

These are sufficient for suspension; but, if more are desired, the large tribe of *Achimenes*, at least the dwarf species, may be used during the summer months. In summer, also, some few species of *Orchids* may be suspended successfully.

T. APPLEBY.

QUERIES AND ANSWERS.

HASTENING THE GROWTH OF LAURELS AND HOLLIES.

"Will you tell me whether there is any, or the best way of hastening the growth of *Variegated Hollies* and the *Common Laurels*, especially when much under the influence of over-topping trees?—T. PRATER."

[Common Laurels and Variegated Hollies are as much influenced by good cultivation, good soil, and good stimulating manures, in the shape of very rotten dung, or very much reduced drainage from the stables or cow-houses, as any two plants under British husbandry. If good cultivation, good soil, and good manure are skilfully applied to these shrubs, their being "over-topped" by other trees is rather favourable to a quicker growth than otherwise; but if the roots of large trees are allowed to carpet the surface of the soil in which such evergreen shrubs are planted, their cultivation is worse than bad. If long weeds and choking suckers or grass are allowed to exhaust the soil, that is as bad as the last case; and, if nothing is done to encourage them to grow, there is no just cause for wonder that the evergreens do not grow fast. There is no tree, or bush, or shrub on the face of the earth that will grow and flourish

under large trees if both are left to themselves. There is no large tree for a garden or pleasure-ground which will take much hurt if its roots are cut off in digging the first foot or fifteen inches of the ground, except within a yard or so of the trunk. The depth of fifteen inches of good soil, kept well dug and dunged, and free from weeds, will grow Hollies, Yews, Box, Spurge Laurel (*Daphne laureola*), common Laurel, and Rhododendrons in peat to full perfection under the largest trees in the country, and with no sort of damage to the large trees; but until the whole are fully established, or say for the first ten years, the treatment is very expensive. Then the question is, will it pay? And the only answer is, that it will not pay to half do it or quarter do it. To pay at all it must be thoroughly done from first to last, because, from the day the searching surface roots are cut in 1857, they begin to advance again, and will go on till they are cut during the next autumn; and, unless these greedy roots are kept well under, all the watering and manuring and hoeing in the world will do very little good.]

RAISING VARIETIES OF FLORISTS' FLOWERS.

"Mr. Beaton has given some useful hints regarding the parents to be used in raising seedling Scarlet Geraniums. Being an ignorant fellow, I should like to know something of the modes of operation; whether plants intended to be operated on should be in a *frame* or *border*; whether the stamens of the seed-bearing parent should be cut off before pollen appears. I also wish to know the best time of day to fertilise. Also, what rules apply to Fuchsias and Show Geraniums?—A WEST COUNTRYMAN."

[Before learning "the mode of operation" it would be better to understand the principle. Cucumbers will grow into better "fruit" without pollen. We cut off all male blossoms from our early Cucumbers; but without pollen there would be no seed, although the Cucumbers are better to eat that way. Now, what is wanted to make a seed grow is a bud inside the seed, as the seed itself is inside the Cucumber. Those, therefore, who think that crossing alters the seed are wrong; it only alters the *nature* of the bud in the heart of the seed, not its size or form, and that alteration in the nature will not be seen till the seedlings are up for weeks or months, according to the kind. After crossing a great number of kinds of flowers it turns out that many of them cannot be made to vegetate. The reason is, they want the bud; they are like our early Cucumbers. The reason why seeds thus produced do not have buds is supposed to be a deficiency in the strength, or quantity, or ripeness of the pollen, and there is no test yet known to prove the pollen in these respects; therefore it is advisable to dust many more flowers of the same kind than would be needed to prove a cross, in order to make sure of it; also, that every flower should be touched with the pollen at least three times during the time it is fit for the pollen, two days being the longest period for any of the Geranium tribe; while some of them—*Baron Hugel* for instance—will be "over" in five hours after the first application, if the stigma was a little moist at the time, that being the criterion for the right condition; but a magnifier could only tell of this moisture in most kinds of Geraniaceæ. The next best criterion to know the right time for the pollen is to watch the five divisions of the stigma till they spread out and curve like five little horns; then draw an open anther *across* over all the horns, and back again two or three times. Any hour of the day or night is as good for this work as any other. The pollen is never ripe in Geraniums and Fuchsias till after the flower is open, therefore it is easy to extract the anthers. In-doors is a safer place to cross, but thousands are crossed in the open air. Have a number-stick to every plant you cross or cross from, and keep the names in a book thus:—No. 1. *Tom Thumb*; 2. *King of Scarlets*; 3. *Gem of Scarlets*. Now, suppose you cross 1 with the pollen of 3, tie a little number-stick marked 3 to the flower or truss. When the seeds are ripe make them 1 × 3, and the seedlings the same; and when these flower you will see the effect of that cross, and so on with thousands.]

* This will require renewing every spring.

PRUNING THE LAMARQUE ROSE AND WISTARIA SINENSIS.

"A CONSTANT SUBSCRIBER" will be obliged by answers to the following queries:—

"1. On the south wall of my house I have a *Lamarque* Rose planted. It is five or six years old, and two years ago was nearly killed by the stupidity of a man, who cut it down to within three feet of the ground; but, although it appeared almost dead, I took it in hand myself, and have succeeded in saving it by means of soap-suds and liquid-manure twice a week, so that now I have the satisfaction of seeing six or seven fine shoots, three of which reach nearly to the top of the house, being from twenty-five to thirty feet in length, the remaining four being about ten or fifteen feet long. Should these shoots be left their whole length or shortened? and if so, how much? A hint as to the future management of the tree when the shoots send out laterals will be very acceptable.

"2. On the same wall, at its south-east corner, I have a *Wistaria* planted, which has been trained, if I may so call it, *espalier fashion*, that is to say, the shoots have been trained horizontally along the south and east walls respectively, the main shoots being about eighteen inches asunder, and numerous laterals emanating therefrom. Will you kindly instruct me as to the pruning of this climber? Should the laterals be cut back to two or three buds to form spurs? or how should they be managed?

"You will also oblige by mentioning the best time for pruning both the Rose and the *Wistaria*."

[1. "The stupidity of the man" ought most certainly to be written in gold letters, and in so many sets as would supply every potting-shed in the three kingdoms, where the feat could be seen by the rising generation. We have said a thousand times over, that the world is now so learned that you can hardly meet with a man who does not know how to treat a climber for the first half dozen years of its life. But look here, and you will see that a *Lamarque* Rose, four years old, was cut down to the length of three feet from the roots because it did not run up fast enough, and in two years after it "ran" the distance of from twenty-five to thirty feet, and liquid-manure gets all the credit instead of one-sixth. The whole secret is as plain to us as anything can be. Had this Rose been "cut" in the more usual way it would not be so high in seven years, if all the sewerage in the world was given it. A correspondent, some years since, had a whole Ivy wall, from which the Ivy parted in a gale, after clinging to it half a lifetime. He was recommended by the philosophers to "hook it up." He wrote to THE COTTAGE GARDENER, and we said, "No, not for the world; cut it right off to the ground." So he did, and in a couple of years it was finer than ever. The way to manage this *Lamarque* Rose for some years is to allow the longest shoots their full length, except about thirty inches to be cut off the ends about the first week in April, and to cut in the side branches from these twice a year, at the beginning of July and any time in the spring. Cut them according to their strength from three to six and to ten inches. All but two or three of the shortest shoots at present to be cut on your *Lamarque* this next April, and after that to keep only one of the lower main shoots on this system, the object being to keep the lower part of the wall furnished.

2. You are quite right; that is exactly the proper way to train and prune the *Wistaria*, the only difference between it and a Pear-tree being the greater distance between the horizontals. Any time from October to March will do to prune it.]

GETTING RID OF FLIES.

"The verandah in front of my house is covered with rough plate glass, and has a southern aspect, and during the last autumn attracted swarms of flies, which became a complete nuisance, and I could not get quit of them. On inquiry I was told that branches of Walnut-trees hung up would drive away the flies, as they dislike the scent of the leaves. I have accidentally found a passage in 'Doctor Antonio,' p. 199, which appears to meet my case. He says, 'A complaint from the same quarter of flies being intolerable, he caused large bundles of a common viscous plant (*Erigeron viscosus*, Linn.), dipped in milk, to be hung up in

all the rooms and the balcony, which attracted all the flies, and freed her at once from one of the plagues of Italy.' I cannot, however, find this plant named in THE COTTAGE GARDENER'S DICTIONARY, and shall feel obliged if you can tell me whether it can be procured, or if it is likely to effect my object, or if any remedy can be applied.—DIBINDALE."

[*Erigeron viscosus* is the same as *Inula viscosa*, under which name you will find it in THE COTTAGE GARDENER'S DICTIONARY. Miller says it is used to drive away fleas and gnats, the strong scent, as some suppose, being disagreeable to those insects; but it is probable that they are caught by the clammy juice of the leaves and stalks. The old English names of this plant are the *Great Sweet Fleabane* and *Great Fleawort*. Gerarde says that "the herbe burned where flies, gnats, fleas, or any venemous things are, doth drive them away."]

THE HOLY THORN.

"A young lady of my acquaintance, a native of Herefordshire, has lately been poking fun at me. She affirms, and stoutly maintains, that there are in that county certain trees, called *Holy Thorns*, which possess the peculiar property of opening their blooms on the night preceding *Christmas-day*, and at no other time. No matter whether the weather has been mild or severe, this wonderful plant always flowers true to the time. Now, I have been for the last seven years constantly engaged in different gardens, and have never noticed that any miraculous suspension or counteraction of the laws of nature has taken place in the case of any plant, and, consequently, am very much inclined to doubt the truth of this statement. I hope to obtain reliable information upon the subject from some of the contributors to THE COTTAGE GARDENER.—B. BINCOFT."

[Surely you cannot have been in gardens for seven years without having heard of the *Glastonbury Thorn*, said to have sprung from the walking-staff of Joseph of Arimathea, and which became a tree where he struck it into the ground when he rested on the ground where Glastonbury Abbey was subsequently raised. You may give credence to as much of this narrative as you please, and we will not contradict the young lady who poked fun at you; but we will say that we never knew a Glastonbury or Holy Thorn which opened its flowers *punctually* on Christmas-day. We have seen many in bloom about the time of that holy anniversary, but they were retarded or advanced by the variation of the season.

The Glastonbury Thorn is only a variety of the common White Thorn, and is called by botanists *Crataegus oxyacantha præcox*. We believe that the Christmas-blooming Thorn was a comparatively recent invention of the monks of Glastonbury. It is not mentioned by any of the Saxon chroniclers, although they minutely enter into the history of the Abbey. The first writer on plants who refers to it is Turner, and he speaks of it uncertainly. In the second part of his "Herbal," published in 1562, he says, "In Summerset shyre, about six myles from Welles, in the parke of Gassenberry, there is an Hawthorne which is grene all the wynter, as all they that dwell there about do stedfastly hold." He, therefore, did not know accurately the habit of the tree. Even Gerarde, some years later, was incredulous; for he says, writing of the White Thorn, "We have, in the west of England, one growing at a place called Glastonbury, which bringeth forth his flowers about Christmas by the report of divers of good credit, who have seen the same, but myself have not seen it, and, therefore, leave it to be better examined." Parkinson, in 1640, writes more certainly as follows:—"It grows at Glastonbury Abbey, and in High Street, or Whey Street, in Romney Marshes, and near unto Nantwiche, in Cheshire, by a place called White Green, which took the name, as it was thought, from the white bushes of Thorns, which there they call *greenes*."]

TIME TO BEGIN FORCING THE SECOND CROP OF STRAWBERRIES.

"When would be the proper time to bring the *second* or next lot of Strawberries into the forcing-house, say we began on the 1st of December to force the first lot? We have put twenty-five of the *Sir Harry*. Do you think them plenty at a time? Our family is not very large, there being only five

at home. Please to advise me what heat I ought to keep the house at, and if I shall do right by putting Camellias into the same house, as I am short of room.—J. P. S. NEWTON."

[We have not forced *Sir Harry*. Twenty-five plants will not supply you long, provided they all do well. Set a fresh lot on the 1st of January, and more by the end of the month. If you commence in a forcing-house you should have from fifty to a hundred at once, as they will bear a good while, and will be brought on along with other things. Commence with 45° at night; in a week or ten days rise to 50°, then to 55°, and never above 60° with fire-heat until all the fruit are set, nor yet at any time if you want good-flavoured fruit. You may allow a rise of from 10° to 15° from sunshine, with air. Keep your soil rather dryish until the flower-trusses show. Camellias will do well in the same treatment after they have done flowering. Kidney Beans will do after the temperature is 55° at night; 45° is a good night average for the greenhouse, and a rise of from 10° to 15° from sunshine. If you could bring your successive Strawberries forward in a mild bottom-heat in a frame, before introducing them, they would thank you.]

PROMOTING THE PRODUCTION OF NECTARINE SHOOTS.

"I have three Pitmaston Orange Nectarines just planted against the back wall of a cold orchard-house. They are dwarf plants two years trained. They should have ten or twelve shoots for training, five or six on each side, instead of which they have but six, three on each side, and these not of the strongest. The lower shoots are very weak indeed. Now, how should I prune these trees? My gardener is for cutting them shorter, in order to *make wood*. I have my doubts about the policy of so doing; but what can be done with them? Had the trees been well furnished with, say ten strong shoots, I should have known what to do.—J. S. L."

[Turn up the ends of the lower shoots nearly vertical, that the sap may be conveyed into them, and shorten the two middle shoots, and you may thus get as many shoots as you please. There is no danger of the centre filling if you keep the sides supplied.

The Churn you ask about can be obtained of the firm whose stand we noticed at the time.]

VINE PRUNING.—GROWING LARGE SCARLET GERANIUMS.

"I have a Vinery to be started on the 1st of January. I intend pruning the Vines to two buds: I suppose they have been pruned to that before. Now, I intend leaving some shoots about a foot long; perhaps four or five shoots on each Vine; and when the buds have pushed and shown fruit, to take off all the shoots that do not show fruit, as my Vines are in pretty good health. Now, what I want to know is, what you think about this system, and when is the best time to stop the young shoots? for I often notice the bunches curl when the shoots are stopped.

"I have some *Tom Thumb* and *Punch* Geraniums that were struck in September, and some that were struck last March and planted out, taken up in October, and potted in thirty-six sized pots. Now, I want to know which would be best for making large plants in pots for a good show, and how I should treat them. I have only a Vinery and a two-light frame.—R. PRESTON."

[If your Vines are in good heart, why not keep to the spurring system? If you leave these short shoots, most likely the best bunches will appear from the buds at the greatest distance from the main stem. In a previous volume the *how* to prune according to circumstances was discussed. If you are at all in doubt about the Vines you had better have plenty of wood for this year, and you will know better how to do next season. Your system may be called the mixed system; but it is anything but so neat as spurring. The young shoots may have the point pinched out, when a joint or two can be seen beyond the fruit. The stopping has nothing to do with the bunches curling off; it rather prevents it. Leave only as many shoots on your Vines as you can expose to light.

Two-year-old *Scarlet Geraniums* will make the best specimens. Give them pot room as they need it, and they will

dearly like the Vinery when your average heat hardly reaches 60°. When it gets to that move them to your frame. You may have them in twelve-inch pots, or larger, by June.

We are not sure, though we suspect that your insects are *Millipedes (Julus)*. Trap them with pieces of carrot stuck in the soil, and pour some ammoniacal water from the gas-works over the ground. Why did you not inclose an insect? The drainings of the dunghill will do good, but chiefly when crops are growing. We do not expect that it will kill the insects.]

CERASTIUM TOMENTOSUM.—BLACK RASPBERRY.

"I am pleased to see that *Cerastium tomentosum* is adopted for decorative purposes. About six years ago I saw it employed as an edging to a circular bed, and next to it a ring of *Campanula Carpatica* (blue), and the inner space filled with scarlet Verbenas. This plant has a remarkably silvery-white appearance, and particularly so in autumn.

"Now that I am troubling you, may I take the liberty of inquiring if the *Hybrid Black Raspberry* is positively known to be a cross between the Bramble and the Raspberry? Where was it originated? If it really has been obtained as alleged I should presume that a cross between *Rubus idæus* and *R. cæsius* would be worth attempting."

[The Hybrid Black Raspberry was raised, we think, by Mr. Rivers, of Sawbridgeworth. Any experiment tending to improve our varieties of the genus *Rubus* is desirable.]

CAMELLIAS DISEASED AND ATTACKED BY SCALE.

"I have a good many Orange-trees, Camellias, and Acacias in big tubs or boxes, with compost of heavy loam and peat, and the roots are all rotten, and every leaf and bloom likely to drop off; they are also covered with the white scale. It is nearly ten years since they had a shift. Now, what am I to do with them?—N. W."

[Perhaps the most economical plan would be to feed the furnace with them; but if you like to have a little hospital experience, try the following:—Prune them hard in, so as to get rid of all the small twigs. Scrub every part left with a solution formed of six gallons of water, a pound of soap, half a pound of tobacco, and a pound of glue, well mixed in hot water. Then place all the plants together where you can plunge and surround them with a good bed of sweet dung and leaves, taking care, however, not to burn the roots, and giving scarcely any water to them, but syringing the stems when they are not kept moist by the moisture from the sweet, fermenting dung. When young shoots have broken afresh repot into light, sandy soil, and inure the plants by degrees to common treatment.]

DESTROYING THE MEALY BUG ON CACTI.

"Would you be so kind as to give me your opinion if I make half the quantity of the mixture that Mr. Fish recommended to kill the Mealy Bug? If I make it the same strength that he recommended in the last monthly part of THE COTTAGE GARDENER, do you think it will injure Cactus, Mammillaria, Opuntia, and Echino-cactus, if I syringe them with it, to kill the Mealy Bug?—BEGINNER."

[You may use half the quantity you propose for insect-covered Pine Apples; but we would not advise you to use such a strong dose for Cactus, &c. We have tried turpentine and spirits of wine on such without effect, or rather, with too much effect. For such plants as you speak of we would use no sulphur, except a little of the clear solution of it, and we should rather incline to discard the turpentine altogether. You may safely add half as much more glue. If you can just feel the liquid a little sticky when you wet your thumb and finger and press them together it will do, and you may safely syringe the Echino-cacti, or draw them through the liquid. For such things we would also reduce by one-half the quantity of soft soap. Try a few, and let us know the result. We once so cleared some Melo-cacti of scale, &c., and attributed most of the cure to the merits of the size or glue. They should be syringed with clean water a few days after being so doctored.]

PINUS MONTEZUMÆ.

FOUND by Mr. Hartweg on the mountains of Mexico, near Ajusco, forming a tree forty feet high.

Leaves in fives, from three to four inches in length (on the wild specimens), rather stout, very rigid, triquetrous, rough at the angles, thickly set upon the young branches,

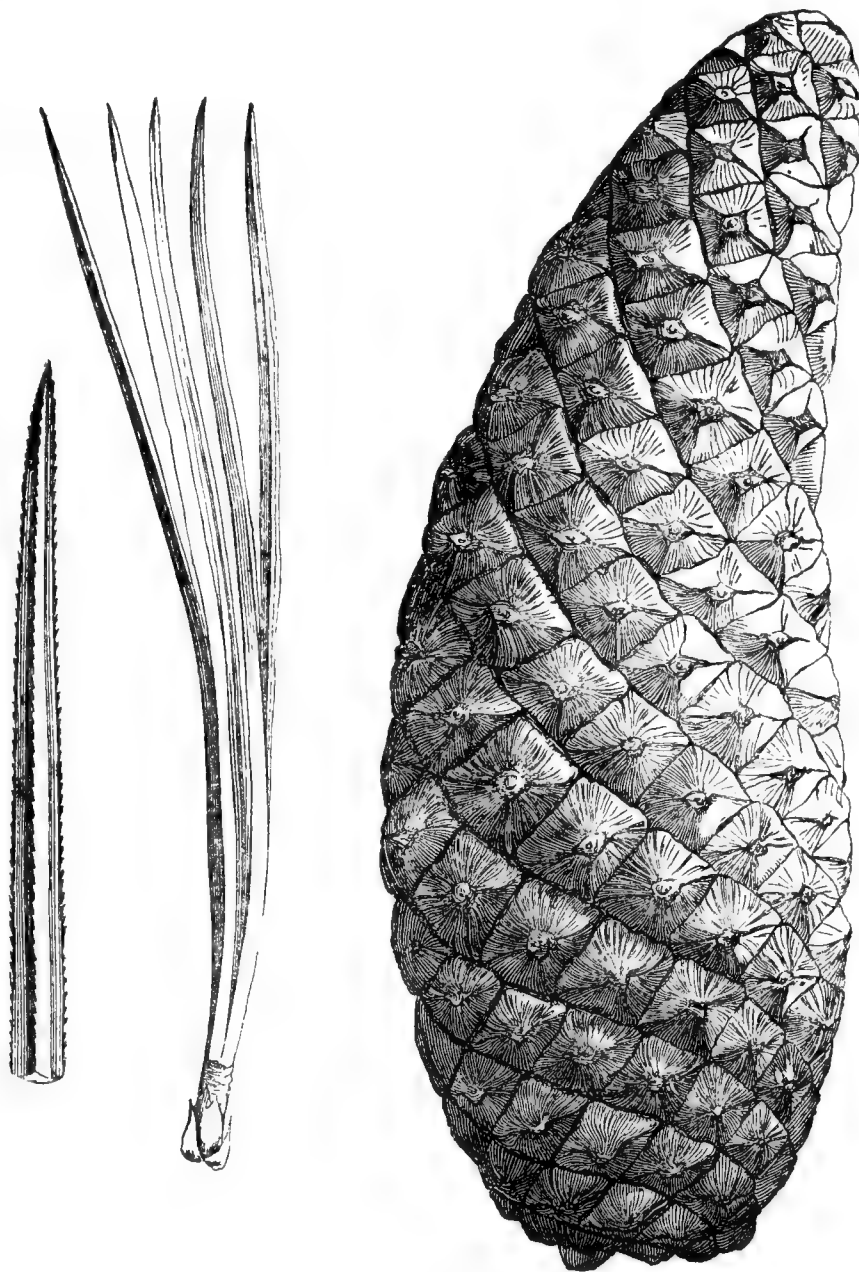
and supported by long, sharp-pointed, brown scales at the base of each sheath. They are of a dark-green colour and much resemble those of *Pinus pinea*. Sheaths persistent, nearly half an inch in length, and rather rough; seed-leaves on the young plants from six to eight in number. Branches few, very irregular, rather stout and twisted; bark very rough, particularly on the young wood, which is covered with numerous long, broad, sharp-pointed scales. Buds few, imbricated, non-resinous, and rather lengthened. Cones in clusters of three or four together, but frequently single, mostly incurved, nearly horizontal, from four to five inches in length, and one inch and three quarters in the broadest part, which is near the middle, then tapering to both ends, but especially towards the point, which is rather small. Scales small and nearly equal in size, from sixteen to eighteen in depth, slightly elevated, and armed with a small prickle when young. Seeds small and winged.

This Pine is very distinct, both in cones and leaves, from the plant formerly distributed by the Society under the name of *Pinus Montezumæ*, and of which Mr. Loudon published an account in his last edition of the *Arboretum Britannicum*, under the name of *Pinus Montezumæ Lindleyi*, he regarding it as different from the plant previously published by Mr. Lambert under the name of *Pinus Montezumæ*.

It answers very well to the description of *Pinus Montezumæ* by Mr. Lambert, as quoted by Loudon; but the latter differs in the cones, which are said to be nine inches long, whereas those received from Mr. Hartweg are only half that length. But Mr. Lambert's account seems to have been partly drawn up from report, as is evident from his stating in one place that his *Pinus Montezumæ* has cones nine inches in length, and in another place that they are nearly six inches long, that is to say, twice as long as those of Swartz's *Pinus occidentalis*. I do not, therefore, attribute importance to this discrepancy.

Pinus occidentalis, with five very long, rough, slender leaves, must be near *P. leiophylla*. — GEORGE GORDON. — (*Horticultural Society's Journal*.)

[*Pinus Montezumæ* is usually considered tender, but we are informed, that it has been found hardy in Bedfordshire, Hertfordshire, and Devonshire, and that there is a magnificent specimen in the Pinetum of W. R. Baker, Esq., at Bayfordbury. — ED. C. G.]



CHANGES IN THE DOUBLE-WHITE CHINESE PRIMROSE.

It may be of service to some of the readers of THE COTTAGE GARDENER to know that the double-white Chinese Primrose does not always, at first, come double from cuttings. Last spring I had only one plant of the double variety, and being anxious to multiply my stock I took eight cuttings of the old plant, and every one of them took root, and made nice little plants by the end of August; but, to my great disappointment, every one of them, as they came in bloom, was single. This I could not account for, as I was perfectly sure that I took the cuttings from the double plant, although it was not in bloom at the time, being the month of April. I was about to consign them all to the rubbish-heap when the idea struck me that they might turn double again.

I have read of double Violets, turned out of pots into the open border, becoming single, but never read of any turning double again. However, as the season advanced my Primulas showed a little tendency to be double. This put new

life in me. I cut all blooms off as they appeared till the beginning of December, and now, to my great satisfaction, there are five of them with flowers equally as double as the parent they all came from. The other three are all single, not being such strong plants. I hope they will take a step in the right direction towards the latter end of January. — CYMRO AM BITH.

MEMORANDA RELATING TO THE CULTIVATION OF MELONS.

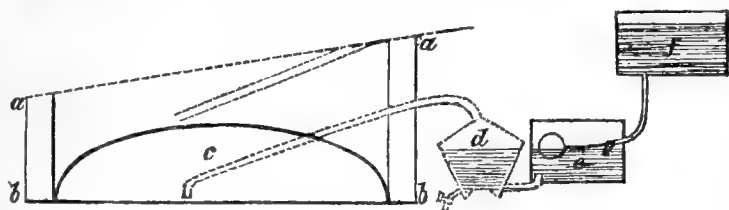
By JOHN WILLIAMS, Esq., C.M.H.S.

(Communicated with a Green-fleshed Melon, weighing 2lbs. 11 ozs., and a Cabul Melon, weighing 2lbs. 5 ozs. Oct. 14, 1845.)

I HAVE desired my gardener to send up a Melon or two ripened in my frame, the south end of which is open to the outward air night and day, except that it has some fly-wire screen, the wires being very close together and painted

black. This wire screen, standing as it does in the *continued inclination* of the roof, of course presents a metallic surface of black wire, and, say in summer time from 10 a.m. till 3 p.m., receives the rays of the sun; the wire is then heated say from 80° to 100° , and consequently heats the air which passes through the interstices of wire, and I always find the thermometer placed under the shade of the Melon leaves standing at 80° or 85° ; if a very hot day at 90° . The upper ends of the glass frame which forms the north side are raised by wedges according to the weather, from an inch to two inches high, as soon as the sun is on the glass, and not closed till evening. This increases the indraught of air through the wire screen, and I consider on *every sunny day* the Melons are exposed from 11 a.m. till past 3 p.m. to as hot an atmosphere as is experienced in the southern parts of Italy, with almost as much ventilation as if growing quite in the open air.

I have grown Persian Melons this way for some years past, and obtained my bottom-heat by tan and dry leaves, lining the north or upper end of the bed with mowings of my grass, weeds, &c. of the summer. But the *bottom-heat* was often too great in the early part of the season, and declined too low in the latter part of the summer. Last spring, therefore, I adopted a certain mode of giving bottom-heat, which I contrived forty-one years ago, when I made my Grape-house, which is that of a steam-vault under the soil in which the plants are intended to grow. The steam-vault is formed by a brick arch; the sketch supposes an end



section before the end is closed up by the brickwork of the frame. *a, a*, brick nine-inch wall; *b, b*, the base of the elliptic arch to hold steam; *c*, the steam-pipe which conveys the steam from the boiler, *d*, holding five gallons, to blow against the surface of the flat brick floor, and thus spread the steam all over the vault instead of rising to the top of the vault in the first instance; *e*, the feed cistern, with ball-cock on a level with the boiler to supply it with water; *f*, a small reservoir which holds eight gallons, to supply the feed cistern.

I find boiling the water for about two hours at intervals of twenty-four hours, gives a certain heat to the soil above the arch, and that the temperature of this soil always corresponds with the quantity of water evaporated, as is shown by the sinking of the water in the upper cistern.

According to Watt, steam at the temperature of 212° occupies 1500 times as much space as when it existed in its liquid state. I found that boiling the water for about two hours in twenty-four gave me, in ordinary weather in summer, a ground heat of from 78° to 82° or 83° , and that seven gallons of water were evaporated, as was shown by the loss of water from the upper cistern. Since $1500 \times 7 = 10,500$, this number of gallons of steam must pass into the vault, and become condensed on the under surface of the arch and the upper surface of the brick floor, where it sinks into the ground and tends to keep up the heat.

The Melon plants grew rapidly at about 82° of bottom-heat; but in the warm weather in June, finding it rising too high, I omitted boiling the water from Saturday evening till Monday evening; this gave me a variable heat between 78° and 82° , the non-supply of heat for twenty-four hours on the Sunday giving the internal heat of the vault time to become reduced. My apparatus was rather too late in setting to work, and this, added to the unfavourable weather after the month of June, prevented my Melons ripening properly. I had, however, one or two of the Cabul Melons after being kept in a warm room for eight or ten days after they were gathered, which were melting and good; and had the season been such as the summer of 1844, I have no doubt but they would have proved excellent.—(*Horticultural Society's Journal*.)

GLASS FOR GARDEN STRUCTURES.

As much discussion has of late arisen on the merits and demerits of the different kinds of glass used in garden structures, I have for once departed from the usual routine of kitchen-garden work to make a few remarks on this important subject, on which so much difference of opinion exists; and, in doing so, I will go back to a period when garden "hothouses," so called, were not so plentiful as now. At the same time, I will confine my observations to what has occurred under my own eye, except in the few cases which I will explain; and as the different descriptions of glass now in use afford good opportunities for comparing their respective merits, as well as calling back to memory those which preceded them, I will, for the sake of perspicuity, begin with the last-named first.

One of the oldest glass-roofed houses that I remember ever seeing was a Vinery on the lean-to principle, differing but little in general features from those in use now, except that the frames of the sashes would be thought clumsy and unwieldy. They were made of oak, I believe, and had been in working order about 115 years, dating from 1710, and, to all appearances, seemed likely to last fifty years longer, as far as decay of most of the timber was concerned, although, at the time I saw it, there were but very slight vestiges of paint upon it. The glass, however, was not such a durable material, and it is likely every part of it had been several times renewed, and in 1826 showed a heterogeneous mixture of the kinds common at that time, *crown* and *under-duty* glass being pre-eminent. I believe there are many older plant-houses, but the above is the oldest one with a glass roof that I have seen, and was then doing duty, and possibly is yet doing so. This, however, has little reference to the glass; but about that time, or when the late talented Mr. Loudon started *The Gardeners' Magazine* (the parent of all our gardening periodicals), a new move in the art of hothouse building took place, and curvilinear iron-roofed hothouses were the order of the day, the glazing in some of them being done in squares not much larger than a card. The quality of the glass was not much looked into, the flattest crown glass being, however, preferred; and the deep green kind with an uneven surface, which was said to be below the standard of paying excise duty, was only used for repairing frames, or by those whose means left them no choice. But at that time the immense number of overlaps in a house, and, consequently, openings for the ingress of air, neutralised any little defect there might be in the quality of the glass, while in those older wooden houses where larger squares were used the openings in the overlaps, from the unevenness of the glass, afforded, in like manner, an easy channel for the admission or expulsion of air. This, with the heavy woodwork, dirt in the overlaps, and other modes of shading, rendered the quality of the glass used a matter of less importance than now, when every crevice except the so-called legitimate "air-giving openings" is carefully closed up in the glass structure.

But few changes took place in regard to glass from 1820 until 1835, and the rage for curvilinear lean-to houses without rafters died away. Soon after the latter period it was found that the annual expense for painting was a serious affair, and other complaints were urged against them. But I may here remark, that though I by no means recommend iron houses of that class, I have found them to answer very well. However, about twenty years ago, or it may be more, *sheet glass* was introduced, and its applicability to be used in long squares soon brought it into general favour, and since 1840 it has been much employed. The great boon of removing the vexatious excise

regulations a few years afterwards gave an impetus to the calling, which the gardening community cannot be too grateful to the minister of that day for bestowing. The increased demand for glass, however, at the moment prevented its being furnished in sufficient quantities to meet the wants of the time, and therefore it retained a higher price than it ought, the consequence of which was the introduction of large quantities of *foreign sheet* glass of an inferior kind into the market, to meet which the home manufacturer was obliged to furnish an article proportionately cheap, which had the bad effect of disseminating an improper glass, against which an outcry was made both far and wide, giving rise to another kind of glass, *rough plate*, being called into use. In the meantime, the advocates of sheet glass, who were willing to pay a fair price for a good article, were at length supplied with one against which few faults could be found. I might also add, that thickness as well as quality was increased at the same time, and I believe few of those who were willing to pay the few shillings more required for the good article had occasion to regret their choice.

About the same time that sheet glass became cheap and plentiful, *coloured glass* was recommended by some, and glass tinted with blue, green, and straw colour was more or less tried; but none of these colours met with much favour. Still I think the use of coloured glass was too hastily abandoned, for a greenhouse I once had to manage seemed to act very well that was glazed with sheet glass tinted *green*. This house was an excellent summer one, and I did not feel any inconvenience from it in winter. Observe, it had not a deep tint of green, but sufficient to stop the strong glare of summer sunshine, and it being a span-roofed house, the lights on the north side were of ordinary clear glass, which answered the twofold purpose of admitting light where it could do no harm, and prevented plants becoming one-sided. One thing, however, must be said, that plants accustomed to a house of this kind did not like to be removed to one of another kind; and as there are but few of that kind in existence now, it is needless saying more about them.

Now, as coloured glass has gone out of fashion, and but little of the old crown glass is used in garden structures, except in repairing old houses glazed with that sort, the majority, if not the whole, of new ones erected of late years have been glazed with *sheet* or *plate glass* of some kind or other, the latter affording a great variety of the kind known as *rough plate*; and, as *polished plate* can hardly be expected to be within the reach of the million, it is only used in particular cases.

The glass at present in most request is *rough plate* and *sheet*, and on the respective merits of each a few words may be of service to those intending to build. At the same time I must admit that I have not had sufficient personal experience in rough plate to speak decisively on its qualities; that the opinion I give is more from what I have witnessed elsewhere, backed by the opinions of others on whom I can rely. Of sheet glass I have had both good and bad to deal with; therefore I speak with more confidence on that.

SHEET GLASS: ITS MERITS.—The good properties of really good sheet glass are various, while it is not without its defects; the foreign kind especially is so indifferent, that I may here caution the inexperienced who may be on the point of building a hothouse to stipulate for good *British* sheet to be used, *i.e.*, if he prefers that kind, as much injury has been caused by substituting a low-priced Belgian article for it, and I believe most of the evils complained of in sheet glass arise from the bad quality of the kind used; but, as we are speaking of the merits of what is good, I class them thus:—

1st. *Appearance.*

2nd. *Transparency*, adapted to forcing-houses.

3rd. *Quality of keeping itself clean under ordinary circumstances.*

4th. *Retaining the same appearance for years.*

5th. *Is easy to cut*, and thereby a favourite with the glazier.

The above remarks are applicable to the good article, which certainly excels other kinds in the points enumerated. We now come to the inferior kinds, which have several bad qualities, as under.

SHEET GLASS: ITS DEMERITS.—The evils complained of in this kind often arise from the bad kind used, and are something like these:—

1st. *A wavy, uneven surface*, forming a great number of imperfect lenses, which, acting on the plants, scorch or burn them into unsightly specks.

2nd. *A more than ordinary brittleness*, whereby squares are broken more often than they ought to be.

3rd. *Not so transparent as the better sort*, and, on being examined, presents a number of specks on one or both sides.

4th. *Changes colour with age*, turning to a dark or rather dull purple tint after being acted on by a hot summer's sun.

Other points might be added to the above, but sufficient is given to show what is meant; but it is impossible to describe on paper the difference between good and medium glass; an inspection, however, will do much that way, especially when there is a chance to see both good and bad at the same time in use. For plant-houses, especially for those having plants in flower, shading will be necessary, even with good glass; but in forcing-houses well ventilated it ought to be dispensed with, and generally answers well.

ROUGH PLATE GLASS: ITS MERITS.—These are neither few nor unimportant, and it is not unlikely but it may be improved. In the present case the remarks are confined to Hartley's rough plate and the ordinary rough plate of other manufacturers; its merits may be classed somewhat thus:—

1st. *Strength to resist hail storms, &c.*, when large squares are used.

2nd. *Semi-transparency*, thereby rendering shading less necessary for plant-houses than when sheet glass is used.

3rd. *A rough or partially fluted surface*, which, instead of collecting the sun's rays into a point, disseminate them in various directions; this, however, does not prevent the house getting heated.

4th. *Flatness*, so as to fit the groove in the bar in all places. This flatness is not supposed to mean smoothness of surface, which is rough, as stated above; but it is not bent up in a corner, as some other kinds of glass are.

These remarks apply to the better description of rough plate in use; but this does not differ so much as sheet in its effects on plants, and the advocates for it are both numerous and influential.

ROUGH PLATE: ITS DEMERITS.—These may be arranged somewhat thus:—

1st. *Indifferent appearance.*

2nd. *Difficulty to cut*, rendering it no easy matter for the glazier to fit in a broken square, which, in spite of all care, will now and then happen.

3rd. *Liability to get dirty after a lapse of years*, the surface being rougher than good sheet.

4th. *Its non-transparency, rendering it objectionable for forcing-houses*, where all the light possible is wanted, while it is scarcely sufficiently opaque to preserve plants in flower in summer without shading; or, as a labourer would say, "it is neither one thing nor the other."

Other points might be added to the above, but sufficient has been said to show that no kind is faultless, and rough plate has as many faults as any other sort. Its appearance, certainly, is not good; and should the glazier,

by accident, cut his squares anything under a quarter of an inch too large, it is ten to one but he breaks the square in trying to get that piece off; in fact, I believe the difficulty in cutting it to fit has a considerable influence on the price charged. That it is liable to get dirty need not be wondered at when we feel the roughened surface. This, of course, may be prevented by washing; but it is often difficult and inconvenient to reach every part of a lofty house at all times when it is needed. Of its non-transparency it is only necessary to hold a written paper near it, and try to read the words through it. Some of the kinds used will allow this to be done three or four inches from the glass, none farther than I have examined, while the greatest number cannot be seen through distinctly more than half an inch, or even less. Now, this is a great drawback when the front lights or windows of a plant-house face an important walk, while the benefits it extends to the plants are very questionable. I would, therefore, advise that under all circumstances a clear, transparent glass be used for the front, whether the same be at top or not.

Having pointed out the merits and defects of the two kinds of glass in general use, I now make a few remarks on the comparative claims of each, and in doing so will endeavour to give as impartial an opinion as I can; and I might likewise add here, that circumstances of late brought me into contact with one of the most eminent hothouse builders of the day, as well as some of the most successful nurserymen, whose opinions I found, in some cases, to be diametrically opposite; but from them and other sources, as well as from my own experience, I am led to give the following advice to the inexperienced who may be about erecting structures of the kind in question:—

FORCING-HOUSES.—Under this head may be included all houses, pits, or frames used for growing Vines, Peaches, Melons, Cucumbers, or, in fact, any fruit or vegetable in ordinary use. All these I would have glazed with good sheet glass. I ought, also, to have added Pines, which some growers shade in summer, and might think would be benefited by a rough plate glass roof; but I have grown them for years under an unshaded sheet glass covering, and am convinced that, if they will not stand all the sun we have and be benefited by it, there is something amiss with them. I therefore, without any qualification, advise all forcing-houses to be roofed with good *British* (not *Belgian*) *sheet glass*.

PLANT-HOUSES, which may include all pits or frames where plants are grown and flowered, but more especially such houses as conservatories, greenhouses, &c., where a prolonged blooming of the plants inside is wanted. These might be of rough plate if thought well of, but I confess having a partiality for the other; nevertheless, that spirit of inquiry and improvement which is abroad may possibly give us a better kind of rough plate than we yet possess, and I will then add my testimony to that of those who now approve of it. In the meantime, I beg to say that many who have adopted it find, to their cost, that its merits have been over-rated, for it is not unusual to see an ornamentally-built conservatory roofed with this glass obliged to be painted, shading being inapplicable, and the appearance inside is then anything but agreeable; but for houses used for the growth of Geraniums, Fuchsias, &c., I daresay it will answer better than sheet, and on that account is more in favour with nurserymen than gardeners; and amongst the latter it is not unlikely that the popularity it has in certain cases may arise from other sources as well; for, if they had been suffering from the ill effects of bad sheet glass, I feel certain they would hail any change as a boon. Hence the outcry against sheet glass. That indifferent rough plate is sometimes used as well as the other I have no doubt; but until the best in use be

improved I must give my unqualified opinion in favour of sheet for most of the purposes wanted in gardening.
J. ROBSON.

APIS.

A TRAGEDY.

IN May last I was consulted by an invalid as to the speediest mode of eradicating a chronic fit of *ennui*, and outdoor matters being always uppermost in my mind I suggested gardening, poultry, bees—anything smacking of fresh air, and demanding patience and a little exercise. The patient snapped at this idea, began digging away, and resolved to find peace of mind in the care of flowers and bees. On the 27th of May a hive containing a new swarm was purchased, sent home in the cart a distance of seven miles, and was at once placed on the bee-stall, the intention being to add another and another until there should be an exhibition astonishing to behold. Of course the bees were a little restive for a day or two, and, of course, dead grubs were brought out and broken comb patched up during at least a week thereafter.

Let me name my friend Jenkins, just for the sake of having a name to deal with. From the moment that Jenkins paid his money he detested the crazy hive—an old straw one with three holes for supering—though he vowed he loved the bees with all his heart and soul—such pretty, docile, energetic creatures! Jenkins at once read up, and discovered that by fumigating bees were easily removed from one hive to another, and forthwith he procured a new cottage hive, had it gaily painted, and made up his mind to gain a little Bee experience by at once removing his darlings from a shanty to a palace.

The 7th of June he set to work. A temporary table was formed in a shed, several long pipes and abundance of tobacco and lucifer matches were ready, and just as twilight ended Jenkins put on a pair of gloves, lighted his candle, and set to work. On the left hand he placed the new hive, and on the right the crazy one, with its floor-board attached. A damp cloth was then wrapped around the bottom of the old hive, a pipe was lighted, the waxed end of the pipe thrust into the hive, and surrounded with the cloth, and the bowl—very incandescent—gripped between his teeth, and covered with the upper lip. Now, full of courage and confidence, Jenkins began to blow; he blew till his eyes started from their sockets, and giddiness threatened to prostrate him. Hark! What a roar! as if the sea had undermined the world, and the breakers were settling in the graves of centuries. He rested a moment as that roar broke out again. He felt inclined to fly—to abandon everything, and, at any risk, save his own life from the fate that seemed impending. The books, he says, never mention the roar of infuriated bees.

But Jenkins resumed his courage, having read that “confidence is the best bee-armour.” He lighted another pipe, and yet another, and blew so much smoke that he expected every moment that the hive would blow up, and involve him and his bees in one common ruin. Ah, that tapping sound! “They fall, they fall, and Rome is ours!” He opens the cloth at the mouth of the hive, and out rushes a black stream of bees, creeping over him, and rambling everywhere, humming as they go the terrible note of despair. Another puff, and down they rattle; another, and they rattle faster. Now he remembers that “a few slight taps cause the bees to fall quickly on the floor-board.” He hammers away with both hands, for he is now growing frantic. More smoke, more drumming, and at last Jenkins is exhausted, and the bees rush out in streams, and, for the best of reasons, “refuse to be comforted.”

He takes a deep draught of something, and now for the solemn climax. He sprinkles the new hive with sugared beer, and then lifts the smoked hive away from its board. What a scene of horror! Comb, bees, honey, piled in one undistinguishable mass; the honey flows in streams everywhere; the bees lie in heaps like grocers' currants; and the spectacle is that of a plum-pudding when the pan breaks during the stirring up, only that, in this case, the currants are alive and roaring, though a little subdued, as if the thirst for vengeance had grown keener.

Now, how to hive them. Impossible! the bees streamed everywhere, drowning in hundreds in their own honey, or groaned their last under the piles of half-melted honey-comb.

Jenkins was frantic. His veil and gloves were no longer useful. The bees got to his wrists, his neck, his forehead; then to his eyes, his nose, his lips. He roared with agony, and in the midst of his agony felt the keener sting of remorse as a malefactor. He rushed from the place, blistered and exhausted, and at an hour before midnight hurried me from my home to the scene of the disaster. What I saw was a worse spectacle than he had left it. I could have pitched him headlong into the midst of the bees, as a sacrifice to their insulted race; but I muttered "fool!" audibly, and masticated my rage in silence.

What was to be done? Plainly they must be hived, and I thought that, as all this had been done to get them into the fancy hive, into the fancy hive they should go, even if I laboured till the morrow morning. I found a large piece of comb; it was so warm and soft that I could scarcely handle it. In a few moments I got this attached to the inside of the new hive. I then attached another piece, and then began to search for the queen. I grew so excited that I handled the bees without even moderate caution, and got more stings in that one hour than I ever had in my life, or hope ever to have again. I carefully unpacked the piled-up mass of broken combs that covered the board, and presently came to a dense mass of the miserable victims, the whole of them saturated with honey, and nearly suffocated with the weight under which they had been buried. I took the whole mass, and placed it on the floor-board of the new hive, then gathered up as many of the clustered heaps of bees as I could find, placed them all together on the floor-board, put the hive into position, and sent the blistered Jenkins to his bed.

The rest may be briefly told. Jenkins slept not a wink—the bees roared all night; they swarmed about the house, took possession of door-posts, water-spouts—were everywhere, and the noise was heard by neighbours fifty yards off. Before daybreak I hurried back, carried the hive to the place it was to occupy, put all the broken combs into a super, and put the super near, not to some comb, but to some bees, for every scrap was covered with their crawling forms, all groaning miserably. That same day I gathered up several hundreds a few at a time, and restored them to the hive, and in this way saved an immense number of lives, though the amount of bees and brood sacrificed was truly awful. In a week the colony got to work, the patient creatures once more laid foundations, the super was removed, and once more Jenkins watched his favourites, though with many tremors and a bitter feeling of remorse.

On the 21st of June what should happen? They swarmed! that is to say, they left the hive in the fashion of a swarm, leaving some fifty or sixty workers only behind, and settled on a bush. I was on my way to chapel, and once more the alarmed Jenkins clutched at me, and dragged me to the scene. To procure the old, crazy hive, and drive them into it, was the work of a few minutes, and very soon after the despoiled hut displaced the palace, and the bees seemed to take possession as if they knew it to be the house from which they had been so mercilessly expelled.

"Be it ever so humble, there 's no place like home."

On examining the new hive which the bees had left, I found that all the comb they had made was a miserable scrap three inches long and one inch wide, and about this a few disconsolate bees were clustered. These left a few at a time, and, I suppose, joined their comrades in the old hive.

The tragedy ends by Jenkins declaring bees a bore, and threatening to suffocate them with brimstone, and throw the hives away. I pitied that swarm of bees, and would have carried them in my bosom rather than they should have suffered another pang; so I boldly bought them at the price originally given, reduced and shattered as they were. I brought them home—another risk—the distance being very trifling, and they went on well, and in September last they weighed more than you would imagine.

Since then barley-sugar has been their friend. They are now doing well, and I hope, with a continuance of barley-sugar, to have them as forward in spring as many stocks

that were neither suffocated, smashed, robbed, poisoned, trod into paste, nor three times hived the previous season.—SHIRLEY HIBBERD, *Tottenham*.

TO CORRESPONDENTS.

CUTTINGS OF VERBENAS, &c. (Betsey).—The Waltonian Case is not suited for forcing plants in order to get cuttings from them, and it is not suited for such as know nothing about cuttings; but as you "have some little knowledge of cuttings" a Wardian Case is the handiest thing in the world for you. Mrs. Captain Whitty, who was said to be the best gardener about Surbiton two years since, and who knew Mr. Walton and his case, and Mr. West, of Surbiton, who makes them, has just ordered a Waltonian to be sent after her to Dublin, Captain Whitty having been promoted to "Castle Yard;" and what one lady can do surely another can try to excel. After a pot of cuttings is rooted in a Wardian Case the tops of them will make good cuttings to go on with.—Dusting flowers of sulphur thoroughly among the feathers of the Bullfinch would probably have destroyed the lice.

VARIOUS (L. M.).—Your *Humea elegans* must be kept in the greenhouse; it will bloom next year, and then die. Seed sown in a hotbed in April or May, plants pricked off and potted several times, saved over the winter, will bloom in 1858. It is a graceful plant, and looks well either in-doors or out. We used to grow our *Melons* singly in six or seven-inch pots, and, when strong, turn them out into pots about fourteen or sixteen inches in diameter. We prefer plunging partly, so as to secure a little bottom-heat; but we have had them fine, when standing on kerbs, without plunging. They do well enough trained over the bed in the usual way; but, when convenient, we prefer training on a trellis from fifteen to eighteen inches from the glass.

WINDOW GARDENING (A Constant Subscriber).—We had the pleasure of receiving both your letters, and, with several more, they formed the ground-work of two articles on window gardening; one or part of both you will see before the answer to this makes its appearance. We never purposely neglect a letter, though at times we must give a short answer, and in other cases must wait a little. The inquiries are so numerous that, without grouping them sometimes, we never should get through them. Now, we congratulate you on your having a small greenhouse likewise, and hope it is near your dwelling. Mr. Fish thinks that for a house ten feet long a lean-to would be best for you, if you can place it against a wall already there. If not, a little span-roofed one would be best, and a path somewhat sunk in the middle. If you tell us your exact circumstances we will do our best to advise you. Meanwhile, we feel certain your windows will be more easily kept gay. If your house is a lean-to, and as wide as long, you will manage two Vines nicely. For such a size we question if a little flue would not be best for heating. At first we would advise confining yourself to *Camellias*, *Epacris*, *Geraniums*, *Cinerarias*, *Calceolarias*, and *Fuchsias*.

VARIOUS (Clericus).—Our columns being too few for what is wanted just now, we must give a short reply to the many matters your letter contains, as to fully discuss them would require the best part of a number. Your span-roofed house, standing north and south, twenty-six feet long, by fourteen feet wide, is not properly a span-house farther than the roof is concerned, as the east side has five feet upright glass resting on a low brick wall, while the west side and the north end are brick. We think this is so far against you in growing Peaches, Nectarines, and Strawberries in pots, that just in proportion to the height of the west wall, you lose just so much of the afternoon sun. We presume that the entrance on the east side is in the middle, and that you have a walk all round, and a pit in the centre, and that between that pit and walk there is a space before you come to the glass for setting your Peach-trees in pots. Of course, as you propose, oak slabs will keep up that pit for a time as well as bricks; but if there is much sap wood, as there generally is, that time will be short. Certainly they will take less room than brick; but as to their being less liable to injury by frost if it should get into the house, we could not help thinking of the fate of the outside walls if those of the pit were thus likely to be injured. Your idea of raising the bottom of this pit, so as to have it all hollow beneath, to let the warm air under and prevent the cold soil from chilling the roots, can at least do no harm, though the labour of watering in summer will not be lessened in consequence, and we have not experienced the evils you speak of when trees are planted out in Peach-houses. We have had trees quite large enough for the centre of such a house in tubs, but we see no impropriety in your planting them out, and separating the space for the roots of each into various compartments. We have no faith, however, as to the flavour of Peaches being improved when grown as standards, because it is the more natural plan. If you crowd your trees in such a house you will find the reverse. Your proposed shelf for Strawberries on the west wall, about a foot from the sloping roof, will do very well if you do not want them early, and you can give air by some means close to the pots. If you wanted them early, a shelf or two along the south end would be best, and if they were great objects, we would have a narrow shelf on the east side, and also on the east roof, as a single row of pots would not injure the Peaches at an early stage, and the pots would be all gone before you wanted all possible light for flavour. Your proposed flue is all right: is it to be beneath the surface, or how situated as respects the trees in pots along the east side? Your idea of forming a chamber where it enters the house, and having a bed inclosed for propagating purposes, is a good one. Wood is the worst thing you could use for covering such a chamber, unless you keep it fully eighteen inches from the flue, and then the wood should be open, and stones and clinkers placed between the planks. We should prefer having extra strong tiles on the flue there, packing it all round with clinkers and brickbats as hollow as possible, then a layer of washed pebbles or gravel, then a little rough, clean gravel, and then sand for setting the propagating pots in. Your bringing two drains from the south or extreme end to communicate with this chamber to equalise heat is good;

but that equalising heat will render your propagating bed in a Peach-house not very warm, and we can hardly join with you in calling such drains *polmaising*, as to make that complete there should be an outlet from the chamber, instead of confining the heat there for a definite purpose. You will do no harm to Peach-trees or Vineries by keeping bedding-plants and other plants in them whilst they are in a state of rest, provided these plants are clean. We have houses crammed full at the present time. If the temperature is not raised above 40° at night artificially, and there is plenty of air during the day, there is no danger of starting Peaches prematurely, and you may have 5° more for Vines, as they seldom begin to swell their buds until the thermometer nearly averages 50°.

HEATING BY A HOT-WATER TANK (W. L. D.).—We have no doubt you will succeed admirably, and you act wisely in having your flue beneath the pathway; you thus lose no heat. See what Mr. Fish said lately of Cucumbers and their diseases. See, also, as to Pipes *versus* Tanks, page 112, and consult the plan of the tank-house there referred to in No. 52, for 1849. Your tanks will be quite deep enough. Use the best cement, that which brickmakers use for making brick walls look like stone ones. Slate will be a better covering than wood. Have openings to let out the vapour when desirable, or have communications from the slate to the atmosphere, so as to steam without puddling the roots; a small saddle-backed boiler—a Rogers's conical boiler will do; but were we putting up such a place we should prefer Thompson's simple retort; the smallest would suit your purpose, costing about £3 we suppose. By having openings to the tank there will be no necessity for any steam from your flue. We certainly should prefer a tank for our Cucumbers, even for the sake of giving a sweet vapour, when desirable, so easily; but with this exception we would just as soon have pipes below the beds as tanks. Bricks now cost less than they used to do, but we rather think 100 feet of three-inch pipe would be cheapest; but have the tanks if you like them best, and we are confident you will have shoals of Cucumbers. The tank will also be the best for propagating.

CUCUMBER-HOUSE HEATED BY TANKS (W. W.).—See answer to W. L. D., and the references given. His is a span-house, with tank all round except at one end, where there is the doorway to the path down the centre, that path being above the flue that comes from the furnace that heats the boiler. Your house seems more like a pit than a house, twenty-four feet long and eight feet wide; for if you have a tank three feet wide in front, and one two feet wide behind, and a pit in the centre, two feet wide and three feet deep, for fermenting matter, we can see no space left for pathway, or for getting along at all. We do not see any use for a great fire in your manure-pit in the centre, as manure-water will give all the ammonia you want; and were we to study economics we should say one tank three feet wide would be quite sufficient for Cucumbers in an eight-feet-wide house, and the two pipes would be ample for top-heat. A tank all round, and a path in the middle instead of the manure-bed, would make the place the very thing for propagating purposes, and in that case, if you had means for the heat rising from the slate, you would need no pipes at all in such a narrow house. To your other questions we must be brief, just because we are not able to give you such definite information. See what has been said to W. L. D. about boilers. A small tubular, a conical, or a retort boiler would suit you. You can only get a certain quantity of heat out of a given quantity of fuel. If you want a fire to remain long without attention you must have your furnace large enough, and be able to regulate draught and dampers to a nicety. We have seldom seen boilers crack until they are worn out. There is little difference in this respect as regards mere form. We prefer cast iron to wrought iron, or even to copper. We should only be deceiving you if we were to tell you how much fuel you ought to burn in a week, for we have never had such a pit and covered with wooden shutters under our care, and several times when we kept an account we found that no two nights or two weeks were exactly alike. We have found a breezy night at 45° require more fuel than a still night at 32°. You should get the bricklayer that makes the tank to choose your cement. Of course the joints of the pipes must be secure. We cannot tell you what such slate would cost in your neighbourhood. We have no doubt you will succeed.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

- CREWE.** February 3rd and 4th, 1857. *Secs.* S. Sheppard and D. Margelts, Esqs. Entries close January 15th.
- CRYSTAL PALACE.** January 10th, 12th, 13th, and 14th. Grand Exhibition of Poultry, Pigeons, and Rabbits. Secretary to the Poultry Exhibition, William Houghton, Esq., Crystal Palace. Entries close December 13th.
- KENDAL.** At Kendal, February 6th and 7th, 1857. *Sec.* Mr. T. Atkinson.
- LIVERPOOL.** January 28th, 29th, and 30th, 1857. *Secs.* Gilbert W. Moss, Esq., and William C. Worrall, Esq., 6, Lower Castle-street. Entries close on the 10th of January.
- NOTTINGHAM CENTRAL POULTRY ASSOCIATION.** January 13, 14, and 15. *Hon. Sec.* Frank Bottom. *Secretary to the Canary Department,* Jno. Hetherington, jun., Sneinton.
- PRESTON AND NORTH LANCASHIRE.** January 21st and 22nd, 1857. *Sec.*, Ralph Leigh, Esq., 125, Church Street, Preston. Entries close December 13th.
- SOUTH EAST HANTS.** At Fareham, January 26th and 27th, 1857. *Sec.* Mr. James James. Entries close January 14th.
- N.B.—Secretaries will oblige us by sending early copies of their lists.

WHAT DOES IT MEAN?

Ay, truly, what does it mean? Call not this tautological, for you yourselves, my dear readers, will ten times

repeat the question in utter consternation when I briefly state the facts.

The Liverpool Committee have given a Silver Cup for the best cock of every class of fowls—to

“Mongrel, puppy, whelp, and hound,
And cur of low degree.”

Yea, to both Pencilled and Spangled Hamburgs; yet Polish cocks, though there are three varieties of Polish shown, are wholly unnoticed! Again, in all the other classes, there are prizes for aged and for young birds, but in the Polish classes all are lumped together, or rather, the chickens are wholly excluded, for no Polish chickens can compete with aged birds; and, again, no second prize is given to Sebright Bantams.

Now, honestly, my gentle readers, have you not already five times cast your eyes up to the ceiling of your room, and exclaimed, “Well, but what *does* it mean?” But hold, restrain your feelings, moderate your wrath-flame, and give not utterance to those indignant words already on your lips. Call it not beggarly thrift, mean, shabby, niggardly; but you may call it, *must* call it, *injustice, frantic injustice!*

“But, Sam,” say you, “is it not worse still? Would *two* Cups have been given to Hamburgs, since the poor fellows can't afford one to Polish, if some motive had not been at the bottom of it—self-interest for instance—for many of the Committee keep crack Hamburgs?” No, no, my friends, the committee is guilty of shameful injustice, gross unfairness, but say not, I beseech you, of self-interest, though, well-a-day! Burns probed human nature to the quick when he wrote—

“But eh! mankind are unco' weak,
And little to be trusted;
If *self* the wavering balance shake
It's rarely right adjusted.”

And who knows, after all, but that, had there been any Polish fanciers on the Liverpool Committee, the balance would have been differently adjusted? But 'tis a festive season, my dear readers, so I'll tell you an allegory, and “let the gall'd jade wince.”

At the nativity of a certain dozen of individuals, Fate gave a frolicsome nod to Nature. 'Twas enough, and the good Dame Nature, in sportive mood, gave them strange heterogeneous endowments. To some she gave parsimony, to others ignorance, to others self-interest, to others blindness to general interest, to others self-will, to others self-sufficiency, and to all she gave *injustice*. Fate gave another nod of satisfaction, and, in course of years, she fulfilled the destiny of these men, and put them on a Poultry Show Committee, that there they might—

“Dress'd in a little brief authority,
Play such fantastic and unjust tricks
As should make exhibitors weep.”

Ay, and make Mr. Samuel Slick show up their injustice in his own delicious, peppery manner.—SAM. SLICK.

P.S.—As to punishment, let all Polish and Sebright Bantam fanciers determine not to send any of their birds to the Liverpool Show. Let the Show, I say, lack the attraction of these birds, and how will the account stand with disappointed visitors? It was a saying of Napoleon, that he could do better without France than France could do without him; so may Polish fanciers say of the Liverpool Show.

HAMBURGH FOWLS.

In your number of Dec. 23rd, your Oxford correspondent seems astonished at my asserting the non-productiveness of Hamburgs, and he will be, doubtless, further astounded at my confession of being utterly ignorant of the qualities of the birds in question, although your pages have published many articles of mine, signed “W. H.” The plain truth is, until lately an impression had taken possession of me that their habits were so restless and uncontrollable as not to permit me a chance of letting them range beyond a pen and netted yard. My usual plan has been to have the eggs set for me to hatch in my own yard, and then, after killing all the suspicious birds, and parting with others, to return to the farm those especially selected for myself, and, as occasion required, to take them up for no longer than circumstances needed. In this manner my stock has been, if not ex-

celling in points, certainly A 1 in constitution, and the greatest proof I can adduce is, that out of some sixty birds last year sent by me to Germany, and elsewhere out of England, of this breed, not one death has occurred, although warned of the unpromising nature of the undertaking.

Not having many birds in my confined yard, and intending to show at Gloucester (where I got a second prize) some Silver-spangled, they were sent to me a few days previously, and to my surprise, *although chickens*, they laid an egg every morning, and after their return, which was a most trying time of it (for, by some neglect of the railway men, they were kept in a horse-box all night, and not sent up to my house until five o'clock on the following evening, "thus having two whole days and a night in an open basket"), notwithstanding all this, they commenced laying in a few days, and are as good a brace of little hens as I ever owned in my life.

No, no, these don't go to walk again.

A word about the *Gold-spangles*. "E. B." has my breed I suspect, and he certainly must know all about them. I have hens laying now, "so I am informed." Before many days they shall be in my pens, and if they conduct themselves as well as the Silver-spangled in confinement, no more Cochins at home for me; they do not ingratiate themselves with the ladies, and I do not wonder at it—they certainly are very *unsylph-like*. As for myself, I rather like them, and find them very useful as mothers in spring. One thing my somewhat extensive experience has taught me—that a cross between a *Hamburgh* and no matter what fowl is sure to produce good layers. Look at the *Black Hamburghs*. No birds I ever owned laid so long or so well. I gave some splendid birds away because there is no place for them in a show, and I am ambitious. The *White Hamburghs* are equally good, but they have no place. Let me strongly advise all keepers of *Hamburghs* to look out for constitution, and not to breed in and in above once or twice. Will any one believe me when I assert as a truth that a friend of mine has bred in and in so long, that his *Spangles* are reduced to mere *Bantams without tails*?—W. H., *Exeter*.

THE CACKLE OF AN OLD HEN.

As I am an aged hen, and seen many a Poultry Show, and come to my years of discretion, I shall not occupy my own or anybody's time in making a long cackle of it, but come at once to my question of complaint, viz., "Why are we hens so grossly, *if not wholly*, overlooked by Judges in their awards of prizes?" I repeat my cackle, "Why are the merits of a pen, consisting of a cock and three or two hens, determined by Judges chiefly, if not solely, by the single merit of the cock?"

Do not pretend to deny it—dispute not my cackle. If Judges *can* affirm that the hens are considered, I tell them, and appeal to their consciences, that it is only when they are themselves in a fix, and cannot tell which cock is the better! Then, indeed, and *then only*, will an obstinate Judge, bent on carrying his point, make a handle of us hens, and say, "Well, but look at the hens; this cock has the better hens with him." So that, at the most, we are degraded to become a mere stop-gap. I repeat that this is the only consideration we receive—mere tools to relieve a *fix* in judging.

This monstrous absurdity is yearly increasing, and 'tis high time it were stayed. 'Tis as inconsistent as it is absurd and unjust; for these very Judges will give as much consideration to a goose as to a gander—to a duck as to a drake—to a hen as to a cock pigeon, and so on. But here I will leave the matter. The injustice is self-evident. I ruffle my feathers, then, and demand—yea, demand—consideration from the Judges, or they shall again pretty soon hear THE CACKLE OF AN OLD HEN, *Hull*.

PIGEONS.

CLASS No 2.—POWTERS (*Columba gutturosa*).

French.

PIGEON GROSSE GORGE.

German.

DIE KROPF TAUBE.

THE class of Powters or Croppers are distinguishable from all other domestic Pigeons by their power of distending or blowing out their throats with air in a large degree, and

it is from this property they derive their name. There are several varieties of this class or breed, and the oldest variety to which I have been able to trace them seems to be the large old German Powter, now nearly, if not quite extinct, and described by Gottlob Neumeister, Weimar, 1837. He says, "Of the true pure race, perfectly white, with smooth heads, a few only are now to be found in our neighbourhood, but are very rare. Their length twenty-two inches, and their breadth with outstretched wings three feet six inches." I am somewhat inclined to regard these as the origin of all the varieties of Powters or Croppers.

VARIETY 2.—THE COMMON CONTINENTAL POWTER.



The common Powter Pigeon, as found in Germany, Belgium, and France, is a large bird, with smooth head, rather short beak, a large crop or throat, which he can blow out and distend with air at pleasure, but which he more frequently allows to hang bag-fashion about his breast; he has long wings, but short, clean legs, and, consequently, does not carry himself very erect. They are of all colours and markings, but, perhaps, more frequently blue, with white flights, and some white about the crop or head. MM. Boitard and Corbie, the French writers, enumerate nineteen varieties of the Pigeons Grosses Gorges ou Boulaus, which varieties, however, consist chiefly in colour and markings. They also enumerate two varieties of Pigeons Lillois and two of Pigeons Cavaliers, which seem only to have the power of partially distending their throats.

The Germans, also, have several varieties of Kropf Tauben, of various colours and markings, some being whole-coloured, pied, splashed, or baldhead marked, some being feathered-footed, and a few turned-crowned. The most remarkable is one that has the habit of rising in the air, distending its crop, and allowing itself to descend somewhat parachute fashion, in performing which exploit they sometimes endanger their lives. The majority of these Continental Powters are large, square-built birds, and are not generally very productive.

CRYSTAL PALACE.

THE Grand Exhibition of Poultry, Pigeons, and Rabbits, to be held on the 10th, 12th, 13th, and 14th January, promises to be the most attractive Exhibition of its class that has ever taken place. 1270 pens of the finest specimens in the country are entered for competition. The whole of the south wing and the tower adjoining will be exclusively devoted to the Exhibition. The preparations are upon the most liberal scale, and all the first fanciers and breeders of Poultry, Pigeons, and Rabbits will be found among the Exhibitors. The following is a summary of the number of pens entered—94 of Spanish, 149 Dorking, 120 Cochinchina, 37 Brahma Pootra, 197 Game Fowl, 150 *Hamburgh*,

73 Polish, 26 Malay, 33 Distinct Varieties, 68 Bantams, 18 Geese, 68 Ducks, 21 Turkeys, 1 Guinea Fowl, 171 Pigeons, 44 Rabbits. On the first day of the Show (Saturday, January 10th) the Palace will open at ten o'clock instead of twelve, as usual on Saturdays.

PERTH ORNITHOLOGICAL SOCIETY'S COMPETITION & EXHIBITION.

The first Exhibition and competition of the Perth Ornithological Society in Poultry, Pigeons, and Canary birds, took place in the City Hall, December 10th. We ventured to predict, when the Society extended its sphere by the connection of Poultry with their Canary birds, that the competition and Exhibition would prove not only of a much more useful, but of a more generally interesting kind. Our prediction has been fully verified. The most sanguine of the promoters of the extended display have had their expectations more than realised. Perhaps, had the arrangements of the Society been earlier matured, the Exhibition would have been even superior to what it was. As a beginning, however, and under all circumstances, it was eminently successful, and certainly it augured well for the future success of the Society in that highly interesting branch of study. Nothing was omitted, on the part of the Committee, in the erection of pens, &c., for the proper arrangement of the various descriptions of Poultry; and, considering that on the morning of the day of exhibition the door of the City Hall was besieged with carts filled with hampers, everything was got up with an alacrity and correctness which were surprising. The pens of Poultry and Pigeons numbered about a hundred, and the cages of the Canary birds nearly the same. In all we considered that nearly five hundred birds of every kind were presented. The pens and cages stretched from one end of the large hall to the other, and were so nicely arranged that no visitor had the slightest difficulty in finding and getting a full inspection of any class of the feathered tribes he wanted to examine. The Pigeons were few, but they were beautiful birds. Two Geese, from Lord Kinnaird, were particular objects of attraction, as was also a Turkey cock, from Mrs. Blair, of Inchmartine, which was really a princely fellow, and seemed to delight in displaying his rich and glossy plumage before the visitors. It would be impossible to describe all the different birds which attracted particular notice; but there was one for which no classification was allotted, a hybrid between a common Barn-door hen and a Pheasant, a remarkably beautiful creature, sent by Graham Reid Mercer, Esq., of Tulchan. We have no hesitation in concluding our notice of this Exhibition in stating, in the language of the Judges, whose names we give, that in the various exhibitions of the same kind which they had witnessed, they had never seen a display in the quality and beauty of the birds equal to it. The Judges' decisions gave universal satisfaction. At the close of the Exhibition some of the birds were sold at very high prices. A Spanish cock we heard seven guineas asked for, and five offered and refused; ten pounds for a pair of Powters belonging to Mr. Ure, of Dundee, were quietly pushed aside, and five pounds for a pair of Carriers. We had almost omitted to mention that Messrs. J. Duncan and D. Stewart, of Perth, excelled in their specimens of Canary birds. The Judges for the Poultry were—Mr. Little, Glasgow; Mr. Ritchie, Glasgow; Mr. McFarren, Parkhead; and Mr. Brown, Perth: those for the Canary birds were—Mr. Haddow, Glasgow; Mr. Scott, Paisley; Mr. Cunningham, Anstruther; and Mr. Bennie, Perth. The following is the list of the prizes awarded:—

POULTRY.

OLD SPANISH.—First, Mr. Thomas Ross, Perth. Second, Mr. David Henry, Almondbank. Third, Mr. Alex. McGregor, Scone.

YOUNG SPANISH.—First, Mr. John McDougall, Perth. Second, Mr. Andrew Croll, Perth. Third, Mrs. Blair, Inchmartine.

COCHIN-CHINA.—First, Miss Bell, Rashiehall. Second and Third, Mrs. Blair, Inchmartine. Highly Commended.—Miss Bell.

DORKINGS.—First and Second, Mrs. Blair, Inchmartine. Third, Mr. Alexander McGregor, Inch.

BARN-YARD FOWLS.—First, Mr. John Carmichael, Perth. Second, Mr. Alex. McGregor, Inch. Third, Mr. John McDougall, Perth.

SILVER-SPANGLED HAMBURGS.—First, John Robertson, Burnside. Second, Mr. Johnston, St. Martins. Third, Mr. H. Meldrum, Dumfriesshire.

No old Scotch breed presented.

CROSS BREED.—First, Mr. James Suttie, Inchture. Second, Lord Kinnaird. Third, Mrs. Blair, Inchmartine.

BANTAMS.—First and Second, Mr. H. Meldrum, Dunfermline. Third, Mr. George Ure, Dundee. Highly Commended.—Hon. Miss Kinnaird.

COMMON GESE.—First, Lord Kinnaird. Second and Third, Sir Thomas Moncreiffe.

DUCKS.—First, Lord Kinnaird. Second, Sir Thomas Moncreiffe. Third, Mrs. Blair, Inchmartine.

TURKEYS.—First, Mrs. Blair, Inchmartine. Second and Third, Lord Kinnaird.

PIGEONS.

POWTERS.—First and Second, Mr. George Ure, Dundee. Third, Mr. Alex. Cochrane, Perth.

CARRIERS.—Mr. George Ure, Dundee.

FANTAILS.—First and Second, Mr. Alex. Cochrane, Perth.

RUFFS.—First and Second, Mr. H. Meldrum, Dunfermline. Third, Mr. Alex. Cochrane, Perth.

CANARY BIRDS.

YELLOW COCKS.—First and Second, Mr. Daniel Stewart, Perth. Third, Mr. Jas. Robertson, Kirkcaldy.

BUFF COCKS.—First, Mr. H. Meldrum, Dunfermline. Second, Mr. D. Stewart, Perth. Third, Mr. John Mitchell, Perth.

YELLOW HENS.—First, Mr. D. Stewart, Perth. Second and Third, Mr. James Robertson, Kirkcaldy.

BUFF HENS.—First, Mr. John Mitchell, Perth. Second, Mr. D. Stewart, Perth. Third, Mr. James Robertson, Kirkcaldy.

BUFF OR YELLOW PIEBALD COCKS.—First and Second, Mr. J. Duncan, Perth. Third, Mr. H. Childrum, Dunfermline.

—(*Perthshire Courier*.)

[It is not in unison with the good Scottish love of the useful, to give 20s. for the best cock Canary, and only 10s. for the best pen of Dorkings.—Ed. C. G.]

ESSEX POULTRY EXHIBITION.

THIS was held at Colchester, on the 31st of December and three following days. The following are the awards of prizes:—

THE COLCHESTER CUP (a Piece of Plate, value Twenty Guineas), For the best General Collection of Domestic Poultry, sent for competition for the General Prizes, consisting of not less than Ten Pens and Five Varieties, shown by any amateur exhibitor resident in the United Kingdom. Mr. George Botham, Wexham Court, Slough, Bucks.

THE COUNTY'S CUP (a Piece of Plate, value Ten Guineas), for the best Collection of Poultry (not less than Six Pens and Three Varieties) shown by any amateur exhibitor for general competition. Mr. John Kersley Fowler, Prebendal Farm, Aylesbury.

A PIECE OF PLATE (value Five Guineas), offered by William Fisher Hobbs, Esq., for the best General Collection of Domestic Poultry, consisting of not less than Six Pens, shown by any amateur exhibitor residing in Essex or Suffolk. Mr. Charles Punchard, Blunt's Hall, Haverhill.

A SILVER MEDAL, offered by Joseph Cooke, Esq., Colchester, for the best General Collection of Pigeons, consisting of not less than Five Pens, shown by any amateur exhibitor resident in the United Kingdom. Mr. Twose, Bridgewater.

A BRONZE MEDAL, offered by the Hon. Secretaries of the Society, for the best GAME COCK, of any age or colour. Mr. William Bagg, jun., Colchester.

A BRONZE MEDAL, offered by the Hon. Secretaries of the Society, for the heaviest Pen of three Turkeys, not exceeding nine months old on January 6th, 1857. Rev. Thomas Lyon Fellowes, Beighton Rectory.

DORKING (Coloured).—First, Mr. G. Botham, Wexham Court, Slough, Bucks. Second, Mrs. Parkinson, Knapthorpe, Newark. Third, Hon. Wm. Warren-Vernon, Wolseley Hall. Highly Commended.—Mrs. Henry Fookes, Whitechurch, Blandford, Dorset. Mrs. Parkinson, Knapthorpe, Newark. Mr. Richard Postans, Shelly Priory, Hadleigh, Suffolk. Commended.—Mr. Henry Robert Sexton, Thorington Hall, Wherstead, Suffolk. Mr. William Fisher Hobbs, Boxted Lodge. (An unusually good class.) **Chickens of 1856.**—First, Mr. F. A. Read, Romford, Essex. Second, Mr. Charles Punchard, Blunt's Hall, Haverhill, Suffolk. Third, Rev. Thomas L. Fellowes, Beighton Rectory, Norfolk. Highly Commended.—Mr. Henry Robert Sexton, Thorington Hall, Wherstead, Suffolk. Mr. John Kersley Fowler, Prebendal Farm, Aylesbury, Bucks. Mr. Henry Robert Sexton, Thorington Hall, Suffolk. Mr. W. B. Rouse, Wickham Market, Suffolk. The Right Hon. Lord Robert Grosvenor, M.P., Moor Park, Rickmansworth. Commended.—Mr. George Round, Colchester. Mrs. Parkinson, Knapthorpe, Newark. (A better class could not well be exhibited.)

DORKING (White).—First, Mr. H. Lingwood, Needham Market, Suffolk. Second, Rev. G. F. Hodson, North Petherton, Somerset. **Chickens of 1856.**—First, Mr. H. Lingwood, Needham Market, Suffolk. Second, Mrs. Henry Fookes, Whitechurch, Blandford, Dorset.

DORKING (for the best Cock, of any age or colour. Shown singly).—First, Mr. John Herman Braikenridge, Chew Magna, Somerset. Second, Mr. W. Fisher Hobbs, Boxted Lodge. Highly Commended.—Mr. John Herman Braikenridge, Chew Magna, Somerset. (The competition excellent.)

SPANISH.—First, Mr. G. Botham, Wexham Court, Slough, Bucks. Second, Mr. John Buncombe, Wellington, Somerset. Third, Mr. Arthur Geo. Brooke, Woodbridge, Suffolk. Highly Commended.—Mrs. Parkinson, Knapthorpe, Newark. **Chickens of 1856.**—First, Hon. William Warren-Vernon, Wolseley Hall, Rugeley. Second, Mr. John Kersley Fowler, Prebendal Farm, Aylesbury, Bucks. Third, Mr. Richard Postans, Shelly Priory, Hadleigh, Suffolk. Highly Commended.—Mr. G.

Botham, Wexham Court, Slough, Bucks. Commended.—Rev. W. Talman, Bideston, Suffolk. (An excellent class.)

SPANISH (For the best Cock. Shown singly).—First, Mr. James George Yell, Chelmsford, Essex. Second, Mr. Thomas Twose, Bridgewater, Somerset.

GAME (Blacks, Black-breasted Reds, and other Reds).—First, Mr. Abishai Green, Pressney, Colchester. Second, Mr. William Cox, Brailsford Hall, Derbyshire. Highly Commended.—Mr. Samuel Matthew, Chilton Hall, Stowmarket, Suffolk. Commended.—Mrs. Pattison, Maldon, Essex. Rev. Thomas Lyon Fellowes, Beighton Rectory, Norfolk. *Chickens of 1856*.—First, Mr. Henry Woodward, Stanway, Colchester. Second, Rev. Thomas L. Fellowes, Beighton Rectory, Norfolk. Highly Commended.—Mr. S. Waller, Stanway, Colchester. Mr. S. Matthew, Chilton Hall, Stowmarket, Suffolk. Mr. William Cox, Brailsford Hall, Derbyshire. Lieut. S. Trevor Dickens, R.N., Stoke-by-Nayland, Suffolk. Commended.—Mr. R. Clark, Bury St. Edmund's. Mr. Charles Henry Hawkins, Colchester. (A very good class.)

GAME (Greys and Yellows).—First, Mrs. Parkinson, Knapthorpe, Newark. Second, Rev. Thomas Lyon Fellowes, Beighton Rectory, Norfolk. *Chickens of 1856*.—First, Mr. Charles Everitt King, Stoke-by-Nayland. Second, Mr. John J. Fox, Devizes, Wilts.

GAME (Whites, Piles, Duns, and other colours not classified).—First, Mr. S. Matthew, Chilton Hall, Stowmarket, Suffolk. Second, Mr. George J. Grave, Chelmsford, Essex. *Chickens of 1856*.—First, Rev. Thomas E. Abraham. Second, Rev. Thomas Lyon Fellowes, Beighton Rectory, Norfolk.

GAME (For the best Cock, of any age or colour. Shown singly).—First, Mr. William Bagg, jun., Colchester. Second, Mr. Walter Honeywood, Copford, Colchester. Highly Commended.—Lieutenant S. Trevor Dickens, R.N., Stoke-by-Nayland, Suffolk.

MALAY.—First, Rev. Thomas Lyon Fellowes, Beighton Rectory, Norfolk. Second, Mr. John Buncombe, Wellington, Somerset.

HAMBURGH (Golden-pencilled).—Prize, Mrs. Parkinson, Knapthorpe, Newark. Highly Commended.—Hon. William Warren-Vernon, Wolseley Hall, Rugeley. *Chickens of 1856*.—Prize, Mr. George Botham, Wexham Court, Slough, Bucks. Highly Commended.—Mr. Thomas Parker Mew, West Cowes, Isle of Wight. Mr. A. G. Brooke, Woodbridge, Suffolk. (A most meritorious class.)

HAMBURGH (Golden-spangled).—No award. *Chickens of 1856*.—Prize, Rev. Thomas Lyon Fellowes, Beighton Rectory, Norfolk. Commended.—Mrs. Parkinson, Knapthorpe, Newark.

HAMBURGH (Silver-pencilled).—Prize, Rev. Thomas Lyon Fellowes, Beighton Rectory, Norfolk. Highly Commended.—Mr. Thomas Parker Mew, West Cowes, Isle of Wight. Commended.—Sir Charles Cunliffe Smith, Bart. *Chickens of 1856*.—Prize, Mr. William Cox, Brailsford Hall, Derbyshire. Commended.—Rev. Thomas Lyon Fellowes, Beighton Rectory. Hon. William Warren-Vernon, Wolseley Hall, Rugeley.

HAMBURGH (Silver-spangled).—Prize, Rev. Thomas Lyon Fellowes, Beighton Rectory, Norfolk. *Chickens of 1856*.—Prize, Mr. George Botham, Wexham Court, Slough, Bucks. Commended.—Mr. Richard Postans, Shelly Priory, Hadleigh, Suffolk.

HAMBURGH (Black).—Prize, Rev. Thomas Lyon Fellowes, Beighton Rectory, Norfolk. *Chickens of 1856*.—Prize, Mr. Joseph Cooke, Colchester.

BANTAM (Gold-laced).—First, Mr. James Monsey, Thorn Lane, Norwich. Second, Mr. Samuel Ridley, Clayton, Sussex. Highly Commended.—Mr. George W. Boothby, Holme Cottage, Louth, Lincolnshire. Mr. Thomas Parker Mew, West Cowes, Isle of Wight. (A good class.)

BANTAM (Silver-laced).—First, Hon. William Warren-Vernon, Wolseley Hall, Rugeley. Second, Mr. J. Monsey, Thorn Lane, Norwich.

BANTAM (Black).—First, Mr. T. Parker Mew, West Cowes, Isle of Wight. Second, Mr. A. Holmes, Bridgewater, Somerset. Commended.—Mr. Octavius Bawtree, Abberton, Colchester. Mr. S. Ridley, Clayton, Sussex. (A very good class.)

BANTAM (White).—First, Mr. John J. Fox, Devizes, Wilts. Second, Rev. G. F. Hodson, North Petherton, Somerset. Commended.—Mr. George James Grave, Chelmsford, Essex.

SHANGHAE (Cinnamon and Buff).—First, Mr. Charles Punchard, Blunt's Hall, Haverhill. Second, Mrs. Henry Fookes, Whitechurch, Blandford, Dorset. Commended.—Mr. Richard Postans, Shelly Priory, Hadleigh, Suffolk. *Chickens of 1856*.—First, Mr. C. Punchard, Blunt's Hall, Haverhill. Second, Mrs. Henry Fookes, Whitechurch, Blandford, Dorset. Highly Commended.—Rev. Thomas Lyon Fellowes, Beighton Rectory, Norfolk. Mr. Charles Punchard, Blunt's Hall, Haverhill.

SHANGHAE (Brown and Partridge).—Prize, Mr. Charles Punchard, Blunt's Hall, Haverhill. *Chickens of 1856*.—Prize, Rev. G. F. Hodson, North Petherton, Somerset. Commended.—Mr. Charles Punchard, Blunt's Hall, Haverhill.

SHANGHAE (White).—Prize, Mr. John Kersley Fowler, Prebendal Farm, Aylesbury, Bucks. *Chickens of 1856*.—Prize, Mr. John Kersley Fowler, Prebendal Farm, Aylesbury, Bucks.

SHANGHAE (Black).—Prize, Rev. Henry G. Baily, Swindon, Wilts. *Chickens of 1856*.—Prize, Rev. Henry G. Baily, Swindon, Wilts.

SHANGHAE (for the best Cock, of any age or colour. Shown singly).—Prize, Mr. Henry Ransom, Holbrook, Ipswich.

BRAHMA POOTRA.—Prize, Mr. George Botham, Wexham Court, Slough, Bucks. *Chickens of 1856*.—First and Second, Mr. George Botham, Wexham Court, Slough, Bucks.

POLAND (Black with White Crests).—Prize, Mr. Thomas Panton Edwards, Lyndhurst, Hants.

POLAND (Golden).—Prize, Mr. G. Botham, Wexham Court, Slough, Bucks.

POLAND (Silver).—First, Mr. Thomas Panton Edwards, Lyndhurst, Hants. Second, Rev. Thomas Reeve, Raydon Rectory, Suffolk.

ANY OTHER DISTINCT BREED NOT NAMED IN THE PREVIOUS CLASSES.—First, Mr. Frederick Manning, East Bergholt, Suffolk. (Surrey.) Second, Mr. R. Kennett, Langenhoe Wick, Colchester. (Pheasant Malay.)

FOREIGN BREEDS.—First, Mr. C. Coles, Fareham, Hants. (Andalusian.) Second, Mr. Joseph Newton, Hatton, Hounslow, Middlesex. (Egyptian.) Commended.—Mr. Richard Postans, Shelly Priory, Hadleigh, Suffolk. (Ghoudook.) Mr. William Dawson, Hopton Mirfield, Yorkshire. (Sultan.) Mr. William Grave, High Street, Chelmsford. (Negro.)

TURKEYS (Black).—First, Mr. John K. Fowler, Prebendal Farm, Aylesbury, Bucks. Second, Miss Julia Milward, Newton St. Loe, Somerset. Third, Mr. William A. Warwick, Colchester.

TURKEYS (Grey).—First, Mr. Richard Postans, Shelly Priory, Hadleigh, Suffolk. Second and Third, Rev. Thos. Lyon Fellowes, Beighton Rectory, Norfolk. Commended.—Mr. William Fisher Hobbs, Boxted Lodge, Colchester. Mrs. Henry Fookes, Whitechurch, Blandford, Dorset. (Cambridge). (A superior class.)

TURKEYS (For the best Cock of any age or colour. Shown singly).—First, Rev. Thomas Lyon Fellowes, Beighton Rectory, Norfolk. Second, Mr. William Fisher Hobbs.

PEA FOWL.—Prize, Mr. William A. Warwick, Colchester.

DUCKS (Aylesbury).—First, Mr. John K. Fowler, Prebendal Farm, Aylesbury, Bucks. Second, Mr. Henry R. Sexton, Thorington Hall, Wherstead, Suffolk. Third, Mrs. Henry Fookes, Whitechurch, Blandford, Dorset. Highly Commended.—Mr. William Fisher Hobbs. Commended.—Mr. Henry Robert Sexton, Thorington Hall, Wherstead, Suffolk. (A very meritorious class.)

DUCKS (Rouen).—First, Mr. John K. Fowler, Prebendal Farm, Aylesbury, Bucks. Second, Mr. J. H. Braikenridge, Chew Magna, Somerset. Third, Rev. Thomas L. Fellowes, Beighton Rectory, Norfolk.

DUCKS (for any other breeds).—First, Mr. J. K. Fowler, Prebendal Farm, Aylesbury, Bucks. (Buenos Ayres.) Second, Mr. H. R. Sexton, Thorington Hall, Wherstead, Suffolk, Suffolk. (Call Ducks.) Third, Mr. William Fisher Hobbs, Boxted Lodge, Colchester. (Improved Essex.) Highly Commended.—Mr. J. Beasley, Chapel Brampton, Northampton. (Buenos Ayres.)

GESE (White).—First, Mr. John Kersley Fowler, Prebendal Farm, Aylesbury, Bucks. Second and Third, Mr. T. Panton Edwards, Lyndhurst, Hants.

GESE (Grey and Mottled).—First and Second, Mr. John Kersley Fowler, Prebendal Farm, Aylesbury Bucks. Third, Mrs. Henry Fookes, Whitechurch, Blandford, Dorset. Highly Commended.—Mr. Richard Postans, Shelly Priory, Hadleigh, Suffolk.

PIGEONS.—Carriers.—Prize, Mr. James George Yell, Chelmsford, Essex. Highly Commended.—Mr. Frederick Esquilant, 346, Oxford Street, London. *Almond Tumblers*.—Prize, Mr. Frederick Esquilant, 346, Oxford Street, London. Commended.—Mr. James Smith, 9, Sale Street, Paddington. *Balds or Beards*.—Prize, Mr. John W. Edge, Aston New Town, Birmingham. (Balds.) Commended.—Mr. Francis Alfred Lavender, Biddenham, Bedfordshire. (Balds.) *Mottled Tumblers*.—Prize, Mr. James Smith, 9, Sale Street, Paddington. Commended.—Mr. F. Esquilant, 346, Oxford Street, London. *Owls*.—Prize, Mr. Thomas Twose, Bridgewater, Somerset. Commended.—Mr. Francis A. Lavender, Biddenham, Bedford. *Nuns*.—Prize, Mr. J. W. Edge, Aston New Town, Birmingham. *Turbits*.—Prize, Mr. Francis A. Lavender, Biddenham, Bedford. *Archangels*.—Prize, Miss Julia Milward, Newton St. Loe, Somerset. *Jacobins*.—Prize, Mr. Thomas Twose, Bridgewater, Somerset. Highly Commended.—Mr. James G. Yell, Chelmsford, Essex. *Fantails*.—Prize, Mr. Richard Postans, Shelly Priory, Hadleigh, Suffolk. Highly Commended.—Mr. James George Yell, Chelmsford, Essex. Commended.—Mr. Robert W. Cowell, Hatfield Peverel, Essex. *Trumpeters*.—Prize, Mr. James G. Yell, Chelmsford, Essex. Highly Commended.—Mr. Thomas Twose, Bridgewater, Somerset. *Powders or Croppers*.—Prize, Mr. Thomas Twose, Bridgewater, Somerset. Commended.—Mr. James G. Yell, Chelmsford, Essex. Mr. James Smith, 9, Sale Street, Paddington. *Barbes*.—Prize, Mr. James G. Yell, Chelmsford, Essex. Commended.—Mr. C. W. Burningham, 142, Edgware Road, London. Mr. William Grave, Chelmsford, Essex. (Black.) *Runts*.—Prize, Mr. Francis Alfred Lavender, Biddenham, Bedford. *Dragoons*.—Prize, Master G. E. Attwood, Colchester. Commended.—Mr. James G. Yell, Chelmsford, Essex. *Any other new or distinct variety*.—Prize, Mr. Francis Alfred Lavender, Biddenham, Bedford. (Fring Backs.) Highly Commended.—Mr. Francis Alfred Lavender, Biddenham, Bedford. (Spots.)

SWEEPSTAKES.—Winners.—Mr. Samuel Matthew. Mr. Henry Woodward, in Black-breasted Game Chickens. Mr. William Henry Cobb. Rev. T. Lyon Fellowes—to decide. Lieut. S. Trevor Dickens. Mr. George Botham.

OUR LETTER BOX.

COCK'S COMB BECOME PURPLE.—“I have a valuable Dorking cock, now entered for exhibition, whose comb has lately assumed an unpleasant appearance, being all round the edge of a dark purple colour, and hanging over on one side. Can you tell me the cause? or, what is more to the purpose, can you give me a remedy to restore it to its proper colour and its former elevation? I think it may have been caused by the extreme cold of the 4th and 5th of last month.—J. F. N.”

[Confinement in a warmer situation for a few days, with plenty of green food, and a little bread sopped in ale given daily, will restore the colour and firmness of the comb, unless there is organic disease in the bird.]

MISTAKES IN PIGEON ENTRIES.—“It is a pity that gentlemen should judge Pigeons who know but little about them, and give encouragement to parties entering birds in classes to which they not belong. A pair of young Carriers are being sent to various Shows as Dragoons, and the Judges, being incompetent to tell the difference of the varieties, are awarding them prizes. The same birds were sent to Anerley, but having gentleman Judges there who were capable, were, along with others, very properly disqualified.—STRAIGHTFORWARD.”

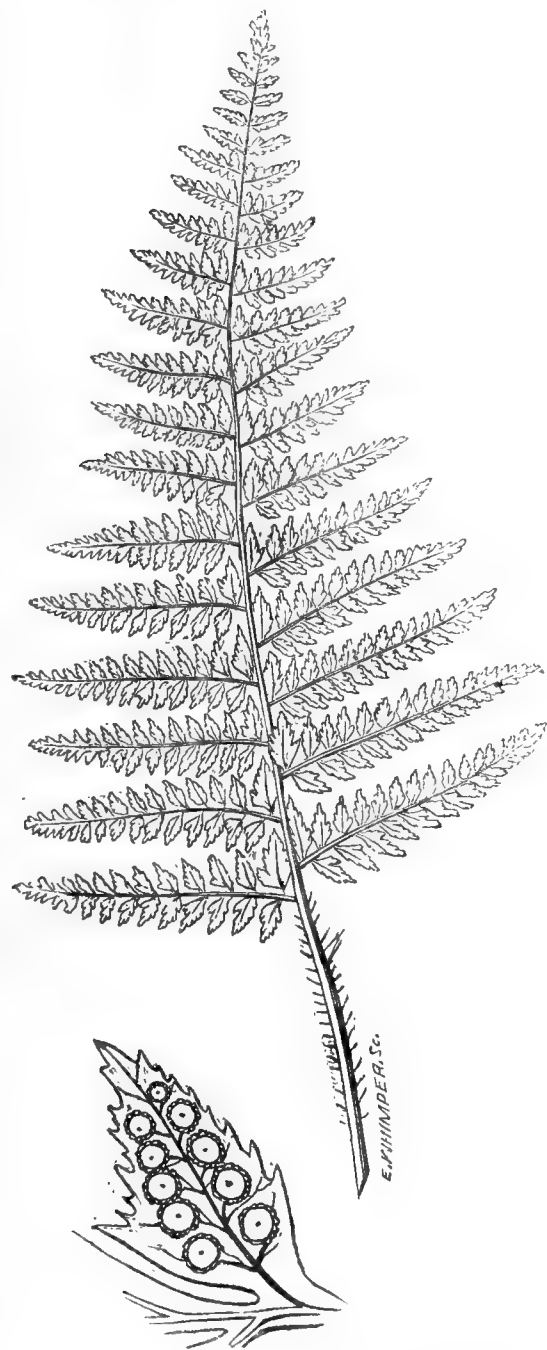
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WEEKLY CALENDAR.

D M	D W	JANUARY 13—19, 1857.	WEATHER NEAR LONDON IN 1856.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
13	TU	Pansy (<i>Viola tricolor</i>).	30.627—30.544	39—20	N.E.	—	3 a. 8	15 a. 4	7 59	17	9 5	13
14	W	Woodbine (<i>Lonicera</i>).	30.304—30.029	37—19	N.E.	—	3	16	9 14	18	9 27	14
15	TH	Hazel (<i>Corylus avellana</i>).	29.954—29.922	41—26	W.	—	2	18	10 26	19	9 48	15
16	F	Crowfoot (<i>Ranunculus</i>).	29.946—29.839	42—35	S.W.	01	1	20	11 36	20	10 8	16
17	S	Archangel (<i>Lamum</i>).	29.593—29.460	50—44	S.	02	0	21	morn.	21	10 28	17
18	SUN	2 SUNDAY AFTER EPIPHANY.	29.461—29.417	51—38	S.W.	08	VII	23	0 48	22	10 47	18
19	M	Dandelion (<i>Leontodon</i>).	29.250—29.192	51—44	S.W.	10	58	24	2 0	23	11 6	19

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 42.0°, and 30.9°, respectively. The greatest heat, 60°, occurred on the 19th, in 1828; and the lowest cold, 4½°, on the 15th, in 1838. During the period 103 days were fine, and on 93 rain fell.

POLYSTICHUM ACULEATUM.



THIS has been included by various botanists in the genera *Aspidium* and *Polypodium*, but all have retained the specific name *aculeatum*, prickly, on account of the sharp-pointed character of the teeth on the edge of the leaflets. Some botanists consider it and *P. angulare* only different forms of the same species. In English it is known as the *Common Prickly Shield Fern*.

Root large, woody, enlarging very slowly, tufted, producing many coarse, wiry side rootlets. *Fronds* numerous, spreading in a circle; their upper side shining, dark

bluish green, but paler underneath; in general outline spear-head shaped, sometimes broad, at others narrow, but always tapering to a point, and rather stiff when mature, though very limp when young; in height from two to three feet. *Stem* leafleted to within three or four inches of its base, and covered throughout with reddish-brown scales. *Leaflets* alternate, close together, narrow spear-head shaped, tapering to a point. *Leaflets* all rather convex, alternate, the upper one next the stem always larger than the others, and parallel with it, giving the stem somewhat the appearance of being bordered with alternate leaflets. They are distinctly, though rather shortly stalked, irregular arrow-head shaped. Towards the upper end of the leaflet they are joined together at their base (decurrent); the upper side of each is largest, sharply toothed, the teeth being unequal, and the points so sharp as to be really prickles; the end tooth inclines to one side; the lowermost tooth on the upper edge forms somewhat of a lobe. The mid-vein of each leaflet has alternate side-veins, and these side-veins are again branched; of the upper side-veins that next the mid-vein bears a mass of *fructification*. The fructification is produced almost exclusively on the leaflets at the top of the frond, and the masses form a parallel line of circles, gradually diminishing in size from the base of the leaflet to its point on each side of the mid-vein. They often press against each other, but rarely run together. Each mass has a flat, circular cover, unnotched, and with an elevation in the centre when young.

There are two varieties, which seem merely alterations of form, arising from accidental circumstances of soil and situation, and of which it is sufficient to say, that of *obtusum* the teeth are more scollop-shaped, yet prickly; and *alatum* has the leaflets connected by a wing proceeding from the sides of the stem.

It is most common in the south of England in woods and on shady banks, especially if moist and stony.

In *England* it has been found at Benroyd Clough, Norland, and Toadholes Wood, in Sowerby Dean, both near Halifax, and near Richmond, in Yorkshire; in Leigh, St. Anne's, and Stapleton Woods, near Bristol; in Burton Wood, near Warrington, in Lancashire; in Shapscombe Wood, near Painswick, Gloucestershire; at Ulverscroft Priory, in Charnwood Forest; at the Valley, near Bromsgrove, in Worcestershire; in the Isle of Man; at Elmdon House, Warwickshire; on Little Warley Common, Essex; about Tunbridge Wells, Kent; near Bramshot, Hants; at Osterley Park, Lamp-

ton Lane, and Sion Lane, near Brentford, in Middlesex; near Hastings and other places in Sussex; at Kingsteignton, in Devon; and near Gurnet Bay, in the Isle of Wight.

In *Wales*, near Wrexham, in Denbighshire; at Cickle, near Beaumaris, and at Lleiniog Castle, Anglesey; and near Bangor and Caernarvon.

In *Scotland*, about Drumlanrig, in Nithsdale; at Peasebridge; and on Cartland Rocks, near Lanark.

In *Ireland*, at Colin Glen, Belfast; Hedge Banks, near Carrickfergus; and near Clonmel.

Johnson, in his edition of "Gerarde's Herbal," is the first to mention this Fern as a British plant, and we have the unusual occurrence, not only of the name of its discoverer, but of the very day of its discovery. He describes it as *Filix mas non ramosa pinnulis latis, auriculatis, spinosis* (Male Fern not branched, with broad-eared and prickly leaflets); adding, "This I take to be *Filix mas aculeata major Bauhini* (Bauhin's Larger prickly Male Fern); neither have I seen any figure resembling this plant. It groweth abundantly on the shadowy moist rocks by Maple-Durham, near Petersfield, in Hampshire. John Goodyer, July 4, 1633."

Polystichum aculeatum is a free-growing, easily-managed, and very desirable Fern for the rockery, Fernery, and also for pot culture. It grows remarkably well in sandy loam and peat (fibry is the best) in equal parts, with an admixture of sand. It requires a tolerable depth of mould to grow in, and to be well drained. During its growing season it must be supplied rather freely with water, although not to make the soil marshy. It bears exposure to light pretty well when once established, but will become much finer if in the shade. It is perfectly hardy, and will bear very severe weather unless the roots are too much exposed, for in that case it is apt to perish. If grown in pots, a slight protection of some kind is desirable, for it will bear indoor treatment much better than many others of the British Ferns. The fructification is ripe by the end of the summer, and from the fructification it may be increased in the same way as directed for other Ferns.

VERY strongly do we solicit the attention of our readers to the Association with the rules and proceedings of which we are about to conclude this invitation; for it is an invitation to follow the example. It deserves the name of the GARDENERS' SAMARITAN CLUB, with this additional claim to attention, that a member without any sacrifice—for no gardener in employment can miss a penny a week—will often be a Samaritan to himself.

RULES OF THE PINE-APPLE NURSERY SICK FUND SOCIETY,
Established January, 1856; and held at the Nursery,
Pine-Apple Place, Edgware Road.

"Bear ye one another's burdens."—GAL. vi. 2.

I.—That a Society be established for the purpose of affording aid to the Members in time of illness, to be called "THE PINE-APPLE NURSERY SICK FUND."

II.—That the Entrance Fee for each Member be *sixpence*, and that the subscription be *one penny* per week, payable every Friday evening to the Secretary or his deputy.

III.—If any Member be in arrears four weeks his name shall be struck off the list, unless he can give satisfactory reasons for his default.

IV.—That none but those in the employ of Messrs. ARTHUR HENDERSON and Co. shall be subscribers to the Fund, and they shall be so four weeks before they can make a claim.

V.—That none but subscribers shall be entitled to be recipients of its bounty, and those only who have been ill, and have lost not less than five days' wages.

VI.—That the meetings of the Society be held in the Collecting Room, in the Nursery, every Friday evening, immediately after the last bell has rung.

VII.—That a special meeting be held on the third Friday in November in each year, for the purpose of receiving from the Secretary a statement of his accounts, and particulars of the Society's proceedings during the year; also for the election of Chairman, Treasurer, and Secretary for the year ensuing.

VIII.—That in the event of either Chairman, Treasurer, or Secretary resigning office during the year, a special meeting be called, giving two weeks' notice on the meeting night after the said resignation, and that an officer be elected, *pro tem.*, until the office is filled to the satisfaction of the majority of the Members present.

IX.—That the minutes of each meeting be entered in a book (to be kept by the Secretary for that purpose), which must be produced each meeting night, and be open for the Members' inspection.

X.—That any Member being desirous to make claim on the funds of the Society, he shall communicate the same through a friend (who is also a Member) on a meeting night, and the latter shall be expected to furnish the meeting with the nature of the claimant's illness, and any information the Society may deem it necessary to obtain.

Should any doubt arise as to the statement given, two Members shall be appointed to visit the sick man, and report their opinion at the next meeting; whereupon the Society shall be at liberty to vote a sum not under 2s. 6d. per week, and not exceeding 10s.: the funds in hand, and the nature of the applicant's necessities, to regulate the amount of award.

XI.—That no Member shall be considered entitled to claim on the sick fund whose illness shall have been brought on by any irregularity or intemperance of his own, and which cannot be referred to providential visitation.

XII.—That if any Member who has been on the funds of this Society, and received allowance therefrom, shall be found intoxicated in any place of ill-fame, gaming at cards or dice, horse-betting, or laying wagers of any kind, such Member to be cautioned and admonished as to his future conduct, and if no amendment ensue he shall be expelled the Society.

XIII.—If at any time anything shall arise or occur in this Society which is not provided for in these rules, the same shall be decided upon by a majority of the Members at a general meeting called for that especial purpose.

XIV.—The foregoing rules cannot be altered or repealed without the consent of two-thirds of the Members, and notice of the same, stating the nature of the alterations proposed, must be given in writing to the Secretary, who shall post a copy of the notice seven days before such meeting is to take place.

XV.—That all Donations and Subscriptions be thankfully and respectfully acknowledged by the Secretary.

The Society owes its existence to Mr. Brewer, foreman of the Pine-Apple Place Nursery, and so well pleased are the workmen there, who belong to the Society, with Mr. Brewer's services to them, that they have just presented him with a handsome lamp. We are indebted to him for the following particulars:—

"In November, 1855, with many sick men around me, I was resolved, if possible, to establish a fund for those who were sick and stood in need of relief; consequently I called together a few of the men, and convened a meeting to take such step into consideration, whereupon I found plenty of cold water thrown upon my exertion. However, nothing daunted, and having obtained the assistance of two or three, I drew up a code of Rules, elected the necessary officers of Chairman, Treasurer, and myself as Secretary, and in a very short time the usefulness of the Society became self-evident, and every man in the employ who had a spark of good feeling or common sense was desirous of being added to the list of members.

"A copy of the Rules I inclose. We meet and transact our business in accordance with the laws laid down, and the time spent over it is of little or no moment—not more than half an hour in the week.

"I will inclose the Minutes of our General Meeting held November 26th, 1856, and from it you can gather all the information you will require.

"Mr. Jno. Henderson gives us 10s. as an annual donation; Mr. Arthur Henderson, 1s. per week; and Mrs. Arthur Henderson 1s. per week, the latter only since our last Annual Meeting. Mr. Gallard gave 10s. 6d., which was the cost of printing the Rules. Our balance now, January 6th, amounts to nearly £7, and with two sick members at 10s. per week each.

"Mr. BREWER stated, 'I have the gratification to inform you that a very considerable sum has been given to (I hope I may say) a very deserving number, who, unhappily for them, merited our assistance. Although I have the pleasure to state that, and to acknowledge the donations and liberal subscriptions of our very worthy employer, still I have cause to say, and

that with great regret, that the Society has not met with the encouragement which it is JUSTLY entitled to, and I hope that for the next season it will very much improve: I am sorry to say, and I hope every individual present will feel as I feel, that I have not done enough for this cause, and that for the forthcoming season, whether as ordinary member or as officer of the Society, still greater exertions ought to be made to assist the Society, and to enhance its benefits. This can very easily be accomplished without any pain to one's personal feelings, or by depriving the employer of his time or money—for time is money—but simply to ask our fellow-labourers in the vineyard, Do you belong to the Sick Fund? By exerting ourselves to increase the number of members, every one will be fulfilling a duty which he owes to himself and his fellow-creatures.

"Since the formation of this Society no less a sum than £14 5s. 6d. has been distributed to the sick members, and the sum received amounts to £18 19s. 4d., leaving a balance in the hands of the Treasurer of £4 13s. 10d. The books and papers of the Society are here for the inspection of the members, and I only hope that the members will interest themselves and inspect them.

"Having performed the duties of Secretary for the past year, I am now out of office; but I am, together with my brother officers the Chairman and Treasurer, eligible for re-election, and offer myself accordingly, dependent upon your consideration."

"All three officers were re-elected, and a vote of thanks passed.

"Mr. BREWER said, 'Considering the vast amount of good this little Society has done since its commencement, I feel quite persuaded that much more can be accomplished, and to the satisfaction of all parties in any way concerned or interested.

"I now recommend that we take into consideration forthwith the following, which I beg leave to put as a proposition:—

"That, in consequence of severe weather during the winter season, it often happens that many a man is prevented from making full time; and this comes at a season of the year when hunger and cold are felt most acutely by those who have not the means to obtain their common necessities for want of money. I therefore propose that, in conjunction with the Sick Fund Society, relief be given to those who have not been able to make full time, or have not received their full pay through loss of time occasioned by the severity of the weather, but that they shall on no account receive monies for loss of time by their own caprice, but such as arises from the employer's command; that the amount to be given under these circumstances be regulated according to the amount in the hands of the Treasurer, viz., when the balance exceeds £5 the applicant be eligible to 1s. per day; when £4 and under £5, 9d. per day; when £3 and under £4, 6d. per day; and when the balance is under £3 that no relief be given for any loss of time. Furthermore, that this loss-of-time relief can only be allowed to those who are subscribers to the Sick Fund Society at the rate of 2d. per week, and that relief be allowed only on account of illness, or on account of loss of time, not for both at the same period to the same individual."

"Seconded by Mr. Herod. Carried."

APPLE PROPAGATION.—STOCKS, &c.

WE come now to one of the most generally useful fruits under culture, and which has been called "the poor man's fruit."

Our readers are aware, as before observed, that there is a great deal of similarity in the mode of rearing young fruit-trees, although much subsequent difference in the mode of training and pruning. Still, as young beginners like to know the very alphabet of gardening, I must chat a little about Apples. There are two stocks in ordinary use in Britain; the common or Crab stock, and the Paradise Apple. Now, knowing that our continental friends make more fuss about stocks than we do, I requested some information from a very ingenious young German gardener, who has ample chances for a

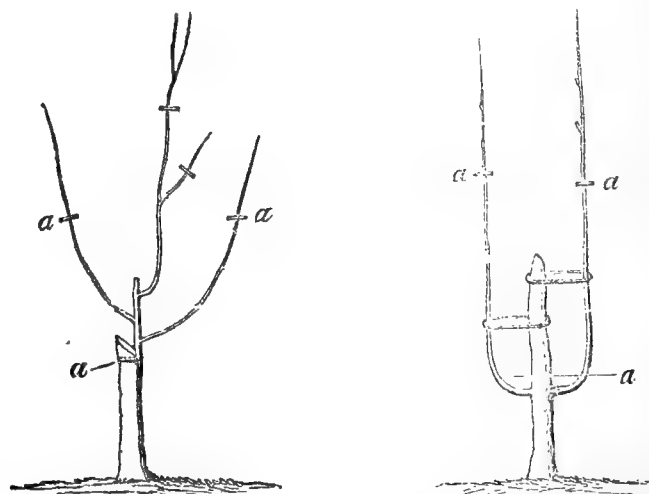
knowledge of the matter both in this country and on the Continent, and I give a short extract or two from his letter. He says, "The different varieties of the Apple stock of the Continent all go under the one collective name of Paradise in England." Again, "On the Continent there are three varieties: first, the *Pomme de Paradis*; second, the *Pomme de St. Jean*, or, as it is called, the *French Doucin*, in order to distinguish it from the third, or the *Dutch Doucin*. The last stock is perfectly identical with the variety in England generally known as 'the creeping Apple.' These are the three species known and acknowledged by all scientific pomologists."

Thus, then, stands the case as to stocks, and I could only consider it necessary to place such facts before the readers of THE COTTAGE GARDENER, hereby thanking my friend for his information.

I believe that a very small proportion of those called Crab stocks are simply the Crab in its wild state, but what may be termed seedling Apples from expressed cider pulp, and such-like sources. It is probable, however, that such come to fruiting earlier than the wilding, as they possess, in the main, a greater tendency to make fibrous roots. The nurserymen, I should imagine, prefer them, as they generally make much growth in a little time.

Apples, as is well known, are planted extensively as standard orchard-trees on stems of from four to six feet in height, the latter height placing their boughs somewhat above what is called the browsing line, where cattle of any kind gain access to them. The use of dwarf trees of various kinds, however, having been on the increase for many years, our business, for the present, will lay more with them than the tall stems. As in other stocks, they may be raised from seed like any ordinary tree, or may be obtained in a young state, after being transplanted, from any respectable nurseryman; the latter course is, in general, preferable. Grafting and budding are both resorted to with the Apple, and they are performed on young stocks just as in other fruits. The nurserymen in general proceed by whip-grafting, which, indeed, in all ordinary fruits, is the readiest mode. In the case of amateurs budding their own fruits I see no reason why they should not place a pair of buds, or more, on opposite sides of the stock, especially if the young trees are to be trained somewhat horizontally; such will the sooner carry out the objects in view. The stocks should be established a year previously to budding or grafting; and their character and mode of handling being at this time so much like the Pear, I may refer the reader to the sketch under that head for the first year from the graft, and pass on to the second year.

We may suppose, then, that under common circumstances the young grafts will have made shoots of from three to four feet or more in length, and the buds nearly as much. The following may convey an idea:—



Graft at first winter's pruning.

Bud at first winter's pruning.

The cross lines marked a indicate the pruning point.

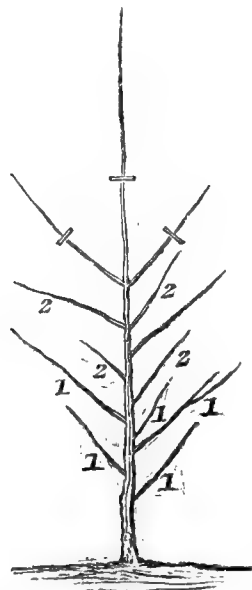
Of course, if No. 1 is required to run up for a standard the main stem must be left, and the side spray pruned away. If No. 2 had only one bud on one side it ought to be pruned back a little shorter, in order to secure shoots on both sides, so that the advantage of two buds or shoots will be tolerably apparent.

We now come to the second year's growth from the graft and bud, but must first remark that the cultivator ought to have made up his mind, at the last pruning season, what character he desires his trees to assume. If he does not, time will be lost in his proceedings.

As to those intended for trained espaliers, or, indeed, any mode of dwarf training, their young shoots must, of course, be led right and left in a manner consistent with the ultimate design, albeit temporary expedients have to be resorted to. At the end of the second year's growth the young trees will be full of fine shoots; and as to dwarf trees for particular modes of training, why they will, by a little summer handling, have been formed, at least, into what we may term the skeleton of their ultimate character. As for describing the various forms they may be made to assume, it is perfectly needless, so many modes have sprung into notice of late. I must here remark, however, on the character of those intended for full-sized standards. Of course, when of the desired height, the head must be pruned away; and, if the grafts have thrived highly, this will have to be done at the second winter's pruning. Under adverse circumstances it may require another season's growth. Such being done, the side spray may be pruned to within a couple of buds or eyes of the main stem; and here I may remark that the reason for doing so is, that the main stem may be strengthened against the wind, &c. I believe that this may not be the nurseryman's general practice at present; but it was so forty years since, and, doubtless, long before that. There can be no question that side growths tend to thicken and solidify stems; indeed, the practice of our best timber cultivators tends to show this; and it is almost needless to observe that a stout and firm-stemmed standard is by far preferable to a weak and slender one.

But the time arrives when such twigs must be removed altogether, and this operation is best performed in a progressive way. We may now suppose the standard tree to be about six feet in height, and the top having been pruned off, a little head is formed. The following may be taken to represent its character:—

Thus, the shoots marked No. 1 may be cut away close to the bole in one season, and those marked No. 2 treated in a similar way in the succeeding one.



The tree represented above may now be supposed to be about three years old from the graft, and at the pruning period the head may be shortened according to

the lines in the figure. At this period, also, the side sprays marked No. 1 may be pruned closely away to the bole; those marked No. 2 may be what is called spurred back to about a couple of inches until the succeeding pruning period, when they may be entirely pruned away.

I do not know that I can render the matter more clear; for to multiply directions, and to recapitulate, but too often perplexes learners. In this case, as in many others, simplicity and brevity are best. I may, however, offer a few general remarks on matters concerning the rearing and well-being of young trees. In the first place attention should always be paid to disbudding waste spray of whatever kind, whether proceeding from the stock or the scion, especially all stock spray springing below the point of junction; for such is sure to be produced. All superfluous stuff of whatever kind should be disbudded most perseveringly, in order that the whole energies of the stock should be honestly disposed of. This proceeding will be a June affair chiefly, for that is the time for vigilance in this respect. If, in consequence of this practice, the true shoots become somewhat gross, pinching should be had recourse to, not generally, but just as any given shoot needs it. By such means the sap may be decoyed in any direction. Another point is to take care that the "snags" left on the stock above the budding or grafting point be pared neatly away, in order that the healing process, which all trees in vigour possess, may have fair play, and that the point of junction between the graft or bud and the stock may become healed over as early as possible. This in all stone fruit is particularly important. Many a fine young tree has received an untimely death-stroke through a badly-managed wound, and be it remembered that the evil is none the less because slow and insidious.

R. ERRINGTON.

WINDOW GARDENING FOR THE WINTER.

(Continued from page 235.)

WINDOW PLANTS FLOWERING IN WINTER.

I WILL now mention a few of the plants that may flower in windows in winter, reckoning the winter to extend from the beginning of November to the end of February, or the beginning of March.

1. **BULBS.**—Hyacinths, Narcissus, Jonquils, Tulips, Crocuses, Snowdrops, Dog's-tooth Violets, *Leucojum vernum*, Scillas, &c. The first four should be potted as soon in the autumn as possible, and kept in a cool, moist, regular-temperated place until the pots are crammed with roots. They may then be gently forced by being placed in a warm kitchen window during the day, and moved to a table near the fire-place at night. A paper funnel placed over them when the flower-stem begins to come will cause it to lengthen freely, as mentioned the other week for Hyacinths. The others will not stand forcing well, but will come freely enough in the window; Crocuses and Snowdrops, when raised in lumps from the garden, after the flower-buds are peeping. Crocuses and the hardy early Tulips will make any window gay, and a Hyacinth or a Jonquil will make it as sweet as desirable.

2. **DWARF HERBACEOUS PLANTS.**—Violets (Neapolitan, Tree, and Russian), Mignonette, Musk, Chinese Primroses, Cyclamens, Polyanthus, Anemone, single garden. The Violets should be divided into little pieces in April or May, planted out in a box or a little border, with east or west aspect, in light, rich soil, kept free of weeds and runners in summer, and supplied with water when wanted, and they will be nice plants for potting towards the end of September. The Primulas should be sown in May in a pot in the window, and the pot covered with a piece of glass before they are up, air then to be given, and the seedlings pricked off one inch apart until the leaves meet, when three might be placed at equal distances round the side of a four-inch pot,

and by-and-by they would each want a pot. During the hottest part of the summer and autumn they would do best in a north aspect, and by the month of November they would be producing their pretty flowers. *Mignonette* should be sown thinly at the end of July and the beginning of August. *Musk*, to be green and bloom nicely in winter, should be allowed to go to rest early, say about July or earlier, by letting it remain dryish, in opposition to moistish, in a cool, moist place. In September, if the plant is turned out of the pot, it will most likely be found full of roots, pushing beautifully, and that pot will do for filling half a dozen or half a score of pots if you want so many. When potted, water, and, after the shoots have come through the soil, never let it want water again until it begins to show that it wants its usual annual rest. Many of our friends throw their Musk-pots away when the plant withers and dies down. If they would only treat it as above, they might serve themselves and many more who like Musk scent. *Cyclamens* will now be growing naturally; when the flowers are over, and the leaves get shabby in the end of spring, keep them in a shady place, and neither wet nor dry, and only give water freely again when you see fresh growth taking place in autumn. Many Polyanthus will be showing bloom nicely from the open border, and so will the single and semi-double Anemones, and, if potted, they will bloom nicely inside of a window.

3. HERBACEOUS PLANTS FROM ONE TO TWO FEET HIGH. — Chrysanthemums, chiefly Pompones, Wall-flowers, Cinerarias, Calceolarias, Ageratums, Heliotropiums, Pelargoniums, Scarlet, Oak-leaved, and Sweet-scented. (See articles on Chrysanthemums lately.) The dwarf *Pompones* are the best for windows, and are easiest managed by dividing the roots or suckers in April or May, keeping the tops in the sun, and giving plenty of water all the summer. A few of the tall kinds might be introduced as a back row; but, if a few large flowers are desired, it is best to layer the points of shoots of such kinds in August, and thus large flowers are obtained from small plants. When done flowering they will do anywhere not over-wet, and where the roots are protected from severe frost. *Double Wallflowers* struck early last spring will probably bloom about February. Single ones sown in March will be blooming in-doors most of the winter. *Cinerarias* to bloom now should have been sown in April or May, or the old plants or suckers from roots divided in August. *Calceolarias* must be chiefly shrubby ones that were not allowed to bloom much in summer. *Ageratums* from cuttings in May and June. *Heliotropes* from cuttings, or old plants cut down then. The *Purple Unique* Pelargonium has done flowering, and the others are chiefly sought after for their leaves.

4. COMPACT SHRUBS FROM ONE TO THREE FEET HIGH. — Myrtles, Camellias, such as double white, Donklarii, fimbriata, Chandlerii, and Bealei; *Epacris nivalis* and *impressa*, besides varieties; *Erica Caffra* and *hyemalis*; *Fuchsia serratifolia*; *Cytisus Attleana*; *Coronilla glauca*; *Daphne Indica* and *Indica rubra*; China Roses, &c. Everybody likes the Myrtle, and there is no difficulty in growing it. If attention is paid not to over-dry the air by fire heat, and to give due changes of atmosphere, the *Camellias* will bloom freely in windows. When done flowering they should be kept from bright sunshine until they begin to knot for bloom, when a place out of doors sheltered from the midday sun would suit them. The same may be said of *Epacris* and *Heaths*, only the latter are very impatient of a close, confined, dry atmosphere. Those who buy a few little plants merely for the bloom will not be disappointed, as the plants will not suffer enough to prevent them blooming. *Daphnes* must be treated much the same as *Camellias*, and are universal favourites. The *Fuchsia* is one of the best

winter-blooming ones, and flowers as naturally in winter as the others do in July. Their treatment was fully given not long ago. Any place not too sunny would suit the *Coronilla* and *Cytisus* out of doors after June, and until the end of October, supplying them then with plenty of water at the roots, and also overhead, but guarding against deficient drainage and the entrance of worms into the soil.

5. SUCCULENT PLANTS. — The one sure to bloom in winter is the *Epiphyllum truncatum*. This should be moderately watered when in bloom, using chilled water, and when done blooming should get all the light and heat possible, and what water it needs. By the end of July it may be placed in a sunny spot out of doors in front of a fence; keep it there until the first week in October, but give no water after the middle of August, and prevent a shower getting to the soil, and when placed in-doors only water after the flower-buds show. The whole of the *Cactus* and *Mesembryanthemum* group, though not flowering now, could be easily managed by an amateur whose time otherwise was much engaged. These would chiefly bloom during the early summer months, and then, and until the middle of September, they would want water; from that time until March they would hardly ever need the sight of the water-can, and the dryness in winter would be requisite for their future blooming. Where a south window could be commanded, and little air was wanted in summer, I know hardly anything more interesting than a small collection of *Echinocacti*, *Melocacti*, and *Mammillaria*. In such circumstances they could be watered in summer, but they would hardly want a drop all the winter.

6. HANGING PLANTS. — I am glad to see that many window gardeners are imitating the Crystal Palace in this respect. The best free winter-flowering thing I know is the *Tropæolum Lobbianum*. A cutting or young plant of this stopped in May so as to make a number of shoots, and these encouraged to hang down, and put inside a basket at the top of the window in September, would yield its red flowers most of the winter. I lately saw a purple and white-leaved *Tradescantia* with its hanging shoots covering the greater part of a window. Two very neat ones, and requiring no water in winter, are *Cactus flagelliformis* and *Cactus Mallisonii*. I should have called them by the name of *Cereus*, I believe. The *Maurandias* and the little *Lobelias* make also pretty creepers; but perhaps the neatest of all, when fairly managed, are the *Hibbertia grossulariaefolia* and the *Saxifraga sarmentosa*.

7. SUCCESSION FOR SPRING AND SUMMER BLOOMING. — These will chiefly consist of Pelargoniums, Cinerarias, Calceolarias, Fuchsias, &c. The great thing with all growing plants is to take every means possible by air, cool temperature, and no more water than is necessary to keep the plants from lengthening, unless there is sunshine to consolidate them. I have already so far trespassed beyond my allotted space, that I would only add that all plants in a state of rest, like the *Fuchsia*, may be kept anywhere, if deciduous, where they will be free from frost. This sets the window at liberty for other things in winter. The fading Chrysanthemums will also give room for bulbs or other things. If these general remarks suit inquirers I shall be glad. There are many little attentions requisite to success, and no writing or advising will make us quite up to them until we have paid some of the penalties of experience and learned to generalise for ourselves.

R. FISH.

CULTURE OF CUCUMBERS IN WINTER.

AFTER reading over "J. C. W.'s" remarks on the failure of his Cucumber-house, and also Mr. Fish's article in reply, I am inclined to say thus publicly

that a more practical statement on that subject has never been penned in these pages than that by Mr. Fish; yet I can conceive it possible for "J. C. W." to fail to draw hence the exact information which his particular case seems to me to require, and that has induced me to send as supplemental the following remarks:—

First of all, let it be practically understood by amateurs that growing Cucumbers in summer and winter are two distinct and very different operations; that one man may be successful in growing Cucumbers in winter, which is the more difficult, and yet fail in his attempts the following summer, or the contrary.

In summer the plants are, as it were, under natural influences, that is, in comparison with the necessary treatment in winter, which forces nature at an unnatural season, so to speak; but forcing "nature" in the winter cultivation of Cucumbers is just as easy as assisting nature by forcing, provided that you do not force beyond nature's bounds. "J. C. W." did force beyond the point, and that was the sole cause of his failure.

All this winter I have been and shall be cutting Cucumbers abundantly. Mr. Beaton has seen twenty brace of fine Cucumbers which I cut in one week about the middle of December; but if I kept up such heat as "J. C. W." speaks of, I question if I should have been able to cut a single brace in the time, or even if I could have kept my plants in sufficient health to bear in February. His heat was fully 10° higher, both by night and by day, than is now found to be the proper point of heat for *bearing* Cucumbers in winter; that is, considering the quantity of air he admits, he must keep up an unnecessary degree of heat to balance the cooling effects of so much air. I hardly ever open a sash or ventilator of my Cucumber-house all the winter; yet it is a new house, and is as close as workmanship could make it; but on a sunny day, if the glass rises as high as "J. C. W." aims at, I must "give air" of course.

The truth is, there is not an exotic house in the country where the heat is maintained above 50° that is hardly air proof enough against a north-easter or any other cutting wind; and those who may doubt the assertion have only to look along the roof of a *nonpareil* house on a very frosty or a rainy morning, and they will then see sufficient steam escaping to tell them that no opening of sashes is required.

It seems to me that all the present theory about the admission of air among house plants is founded only on the requirements of such plants as are hardy enough to live out a long winter at a temperature varying from 30° to 45° or 50°, and that those who apply this theory to an entirely different set of plants can only escape constant failures by the most persevering diligence.

Another point which is of primary importance in forcing the Cucumber, and probably other races of plants, is *never to generate steam*, or, if it escapes by accident from a hot-water boiler, that the arrangements should be such as would exclude it from coming in contact with forced plants. When hot-water pipes are above a certain degree of heat, if they are syringed the house is soon filled with steam or vapour so very hot as to be nearly as dangerous as steam itself to all tender foliage, whether of Cucumbers or any other kind of plant; but, as Cucumbers should not be syringed over the leaves from the beginning of November to the end of January, we must supply an equivalent in the shape of mild, genial vapour, and that is very easily effected by first covering the hot-water pipes with some light material, such as old pieces of canvass or sacking, Frigi Domo, or moss, any of which, when syringed over, will prevent the sudden and violent hot vapour that would issue from bare pipes, and will continue to give off the mildest kind of vapour for a considerable time after the pipes are syringed.

Still, as it is hard to give up any old practice all at

once, let me advise those who prefer to syringe over the leaves of Cucumbers during those three months to use rain water of about the same temperature as that of the Cucumber-house; for *hard water seldom fails to bring on mildew wherever it lodges on or about the leaves and stems.*

Another essential rule is not to cut back or even stop any of the shoots during November, December, and January, and not allow the plants to bear but the most moderate crop all that time, which is the only critical season for Cucumbers.

Peat is the safest earth to grow winter Cucumbers in when they are planted out in a bed, but not the best for pots and boxes. The surface of the peat bed should be frequently stirred, and a little dry peat sprinkled all over it, which tends materially to keep under mildew and unwholesome damp.

I have an experiment now in hand, however—that of growing some Cucumber plants in free, open loam and old cowdung. The result as yet is quite satisfactory. I have plenty of Cucumbers on them at present, and the plants are everything that I could wish for. Allow me to state in conclusion, that the best winter Cucumbers I have ever seen were those which were grown by Mr. Latter, when I lived, as it were, next door to him in Suffolk. He was the raiser of the *Victory of England* Cucumber, and he is now a nurseryman at Bramford, near Ipswich, and if these notes should come under his eye he will see that I have been taking a leaf out of his book. His method was briefly this:—Plant in peat, keep it often stirred on the top, and top-dress it frequently with dry, crumbly peat. Never stop the plants in November, December, and January, and do not syringe them in those months. Never syringe over a naked hot-water pipe in winter, but have the pipes slightly covered, and then syringe them frequently, that is, according to the weather and the consequent state of the fires, and, meantime, do not over-crop your plants.—D. H. KIDD, *Gardener to the Marquis of Breadalbane, Stud House, Hampton Court.*

TRITONIA AUREA CULTURE.

I PERCEIVE in THE COTTAGE GARDENER, at page 14, "AN OLD SUBSCRIBER" is inquiring for advice how to treat *Tritonia aurea* after it has done flowering, and the answer to that inquiry is, That the roots should be shaken out, and then cleaned and repotted in the month of March or April.

If "AN. OLD SUBSCRIBER" will examine his pots of *Tritonia* as soon as he sees this he will find that his bulbs have already made fresh growth, and are ready to start away as soon as they get light and sun. This growth, I think, is quite enough to indicate that they should be potted in autumn.

My practice is to repot them as soon as the flower-stems die down, which is about the beginning of November; but this partly depends upon the manner in which they are put to rest. If the plants are ripened in a cold pit, and water gradually withheld from them, they will take to rest about the above-stated time; but I have seen them keep green in the stems when allowed to stand out of doors, where the heavy rains could fall upon them, until December.

I repot them in autumn as soon as they are nicely at rest, using peat, loam, and leaf-soil in about equal parts, with a little sand to keep it open; but any good light compost will grow them tolerably well, provided the pots are well drained.

Although they commence growing in the autumn, they will do best in a cold, dry shed, without any water, where frost will not reach them.

About March bring them into the light, either in the greenhouse or a cold pit. If you grow them in the greenhouse they will require the syringe used pretty freely to the under side of the foliage to keep down the red spider, which is their greatest enemy. In the months of May or June you may set them out in the open air in a sheltered situation

where they can get plenty of sunlight; but the pots should be protected from the sun by some plunging material. Here they will require a good supply of water, and a good syringing overhead once or twice a week.

As soon as the flower-stems begin to show themselves they should be again put under glass where they can get plenty of light and air. Here they will last a long time in bloom. A few ten or twelve-inch pots well filled with strong bulbs, and treated as above, make a fine display in the conservatory or show-house through the autumn months.

After they have done blooming the plants may be set out under a south wall until they go to rest, or until the wet weather indicates that it is time to house them in a pit or frame, where they should have plenty of air and light, and very little water.

The *Tritonia aurea* will stand our winters planted out under a south wall, and will then flower in autumn; but the blooms are not to be compared with those of plants grown under glass.

Should the frost reach them when at rest in pots it kills them completely, as I once saw a fine pot of bulbs wintered in an old coach-house. During the winter the pot got frosted through, and in spring the gardener found every bulb dead.

I may remark that this *Tritonia* cannot be too highly recommended for autumn decoration to every one that has a greenhouse or pit.—W. DYMENT, *Headingley, Leeds*.

CHLOROFORM FOR STUPEFYING BEES.—THE STEWARTON HONEY HARVEST.

THAT I may not be again guilty of dazzling Mr. Wilson with the "brilliancy of my effusions," and in order to reach as speedily as possible those things in his communication I should like to touch upon, I will admit that he has "closed me up," and that to him I am indebted for that flood of light which has recently illumined my dark intelligence in the matter of giving room *below*. I am willing to make these conceits over to him as a New Year's gift, and may the flattering unction please his soul as much as his innuendoes displease *not* mine; and first, again, for chloroform. While I hail Mr. Wilson's *permission* of its use in certain cases, and by certain kinds of people, as a step in the right direction, and as indicative of a change coming "o'er the spirit of his dream," as well as being well nigh fatal to his objection to it *in toto*, I am at a loss how to account for his not succeeding with it, unless through some defect in the article itself, or in his mode of administering it; or may not his, at one time *complete*, but now *partial*, condemnation of it proceed from that feeling which the poet has thus expressed?—

"I do not like thee, Mr. Fell;
The reason why I cannot tell.
I do not like thee, Mr. Fell."

He says it is "good in the hands of those who have a wholesome dread of wounds and swellings." Nothing could be more for me, and against himself, than this remark. Wounds and swellings attend not the use of chloroform, *ergo* his *better* plan is prolific of both, and we know that the life of the bee which stings is generally forfeited to its temerity. The most satisfactory way of dealing with this matter is to make both plans known; your readers can then decide the matter for themselves. I have already described the system I adopt in preference, after trial, to the *reversing* plan. I will leave it to Mr. Wilson to describe the method he selects in preference to chloroform.

I proceed now to notice what he says about "fixed rules for the management of bees," and assure you I read and re-read that paragraph, and every time with increased surprise. That he should adopt that stereotyped dogma passes my comprehension when I remember that in his first *explosion* he admitted that, in one particular, I acted according to *Cocker*; following this up by laying down a *rule* which ought to have guided me in my after proceedings, and attributing my failure *exclusively* to not having followed it, permitting neither "time, season, nor locality" to enter as ingredients therein.

I do not believe in this doctrine. It may be all very well for people who, having no scientific knowledge and no

scientific principles to guide them, work their bees at sheer random, and whose great success is in spite of, and not consequent to, their management. It may be all very well for such persons to hold this faith, but not for so talented a member of the *illuminati* as Mr. Wilson will have me to acknowledge him. For certain seasons and localities certain rules, the deductions from practical and enlightened experiments, may be framed, and be no more burdened with exceptions than all other rules are.

Even were I able I would not cavil with Mr. Wilson's statements about the quality of the Stewarton honey, nor, for the *present*, with the quantity, as they prove most admirably how correct we both are—he in calling himself an "ungrateful sinner;" I in describing the country as Eden-like. Mr. Wilson is in danger, I fear, of attributing to the system what ought to be ascribed to the locality. What system, however excellent, will yield such gatherings, unless practised in first-class localities (if then), as those he states having had?

I may favour Mr. Wilson with a few "*figures*" when he has given me the *inside* dimensions of the boxes in which these collections were made. Till then I shall freely confess that my bees have never yielded me such deliciously plentiful harvests.

This profitless "chawing" up of one another, as the Yankees have it, is as much opposed to my mind as I conceive it to be opposed to the objects of THE COTTAGE GARDENER, which I look upon more as a vehicle for disseminating useful practical information than as a medium for controversial strife; and when I look over Mr. Wilson's last remarks, and find them so full of the last element, and so devoid of the first, I fear lest his example may have led me to be guilty of the same, in which fear I beg to apologise for encroaching so much upon your space. I shall, therefore, conclude by shortly remarking that until both the anatomy and physiology of the bee are better and more generally understood than they yet are, the name of novice is very applicable to many who may not think so; and the farther apiarians proceed in the study of the insect they will see cause to use the words of the author of the "Night Thoughts," and say, were an apiarian—

"To live coeval with the sun
The patriarch pupil would be learning still;
Yet, dying, leave his lesson half unlearn'd."

—D. G. M'LELLAN.

[We know the difficulty of keeping to facts exclusively in controversy, yet they are the only portions of a controversy from which any benefit is to be derived. If Mr. Wilson would oblige our readers with his system of management, and if Mr. M'LeLLan would do the same, much more instruction would be derived by our readers than from thus seeing these skilled apiarians running the nibs of their pens into each other.—ED. C. G.]

THE POTATO CROP.

Your correspondent, Mr. Weaver, has furnished some interesting particulars relative to the Potato crop of last year; and as the kinds used, the modes of cultivation, and the success attending them vary considerably in different districts, I beg to submit to your readers my notes on the subject. The soil in the garden from which I write is light and rich, and has been under spade cultivation for many years. Our mode of planting is very similar to that of your correspondent, except that we allow two feet between the rows, and we still adhere to the earthing-up system.

A plot of ground was planted on the 9th of February, 1856, with *Haigh's Seedling*, or, as we call it, the *Lapstone Kidney*, and these turned out remarkably well; a good crop, no second growth, and very little disease. *York Regents* by their side were equally satisfactory; they were planted but a few days after the others, and raised about the same time (the middle of October). Now, with us these two kinds supersede all others. *Midsummer*, *Conqueror*, *Salter's Seedling*, *Fluke*, *Trout*, and *Blush Kidneys*, and the *Imperial* and other *Blues*, *Blythe's Seedling*, *Hen's Nest*, and *Early Oxford Round* varieties have all had a fair trial, but fall short of the two kinds first named in point of general utility.

With regard to the *Fluke Kidney* and *Imperial Blue* I may mention that they succeed very well in a garden about three miles from here, where the soil is more loamy, and has not been so long under spade cultivation, and there the *Lapstone* has been discarded as worthless!

I mentioned the identity of the *Lapstone Kidney* and *Haigh's Seedling*. In Rendle's Price Current the *Lapstone* and *Haigh's New Seedling* are mentioned, and these may be distinct; but I believe that the *Lapstone* was raised by a shoemaker in Yorkshire named *Haigh*, who conferred the name of *Lapstone* on his seedling, while others distinguished it by his own.

I should think that if some of your readers would report their experience with regard to the varieties of this indispensable root, the information would be acceptable. A greater circulation of this is required, and I suppose *pommes de terre* do not come within the jurisdiction of the Pomological Society.—W., *Warwickshire*.

[This is from a very reliable source, and we shall be glad to receive the experience of others on the subject.—ED. C. G.]

NEW AND RARE PLANTS.

ASTILBE RUBRA (*Red-flowered Astilbe*).

"A very pretty and hardy plant, with the habit and appearance of a *Spiræa*." Found in the Khasia Mountains of Eastern Bengal, at an elevation of 5000 or 6000 feet. Flowers pink, and blooming at the end of summer and during autumn.—(*Botanical Magazine*, t. 4959.)

SEAFORTHIA ELEGANS (*Elegant Seaforthia*).

A very beautiful Palm, native of the northern and eastern shores of tropical New Holland. When 28 feet high it produced flowers at Kew, in 1856. They are pale pink, in long clusters.—(*Ibid.* t. 4961.)

ADHATODA CYDONIÆFOLIA (*Quince-leaved Adhatoda*).

An erect stove evergreen shrub, introduced by Messrs. Veitch and Son, of the Chelsea and Exeter Nurseries. It is a native of Brazil. Flowers purple and white, appearing in autumn.—(*Ibid.* t. 4962.)

SCHEERIA LANATA (*Woolly Scheeria*).

It is *Mandirola lanata* of some botanists. It is a Gloxinia-like plant, native of the Western Cordillera of Mexico. Flowers with a pale purple lip, softening into a pale pink in the tube. They open in October.—(*Ibid.* t. 4963.)

CATALOGUES OF GARDEN SEEDS.

CARTER'S CATALOGUE OF SEEDS.*—Were the Catalogues before us mere enumerations of names we should have followed our usual practice of leaving them to make their own way before the public; but, as the manner in which the three before us have been prepared, both as regards botanical accuracy and the amount of valuable information they contain, is such as we do not often meet with, we have felt it our duty to give them this prominent notice.

Mr. Carter's Catalogue contains 1794 species and varieties of flower seeds, all the usual and many new varieties of vegetable and agricultural seeds, besides many other accessories of the flower and kitchen garden. We are provided with the botanical and English name of each sort, its position in the Linnæan and Natural Systems of Botany, native country, hardiness and duration, colour of the flower, height, month of flowering, and the price of each. What more could one wish for? We cordially recommend this Catalogue to our readers, which we are informed may be had on prepaid application.

SUTTON'S SPRING CATALOGUE.†—Besides a good descriptive list of kitchen and flower-garden seeds, this Catalogue con-

* A Choice Selection of Floricultural, Vegetable, and Agricultural Seeds, &c., to be had of James Carter and Co., 238, High Holborn, W.C., London, 1857.

† Sutton's Spring Catalogue and Amateur's Guide for 1857. By Sutton and Sons, Royal Berkshire Seed Establishment, Reading.

tains short directions when to sow them, a calendar of operations, and some useful tables. Any one fond of gardening will find this, as well as the other two, very useful for reference.

RENDLE'S PRICE CURRENT FOR 1857.‡—This, like the preceding, is prepared for the primary purpose of informing the public of the seeds and plants to be obtained at the establishment of the proprietors, and a very goodly list it contains; but it also includes a slight almanack, and some very good papers on gardening subjects by Mr. Errington and others. No one who expends his sixpence upon it will regret having done so.

QUERIES AND ANSWERS.

DARK-COLOURED POMPONES FOR POTS.— FAILURE OF CHRYSANTHEMUMS IN THE TEMPLE GARDENS.

IN No. 428 of THE COTTAGE GARDENER a subscriber asks to be furnished with the names of the best six dark Pompones for pot culture. I do not think he can do better than by selecting the following:—*Bob*, *Sainte Thais*, *Doctor Bois Duval*, *Creole*, *Brilliant*, *Il Brasiero*, *Buckingham*, *Autumnum*, *Requiqui*, *Daphnis*, *Hélène*, and *Liliputian*. I have given a dozen, which I have proved all to be good and free-blooming in the open borders. I must except *Mr. Bob*, for he is very uncertain for out-of-door blooming, but does well in the greenhouse.

I beg to thank Mr. Beaton for his interesting article on the old and new Chrysanthemums. No one reads them with more pleasure than I do, as I always pick up something new whenever he writes on them.

The reason I take so much interest in this particular plant is this—I find Chrysanthemums are the best town flowers we have. They are less sensitive to smoke than any other plant, are green all the year, and bloom when all other out-of-door plants are gone. For these qualities, being an old city gardener, I cultivate them very extensively—from ten to twenty thousand annually—and generally succeed in making a good display every year, which causes many thousands to visit the Temple Gardens in November to see what they term a novelty in the city—a flower-show out of doors.

To my great disappointment, this year I have had, for the first year out of ten, a partial failure; and, to add to this, my next neighbour, Mr. Dale, who is gardener to the Middle Temple, never had his so good; so that it makes it appear that it is my mismanagement. His is a nicely-kept little garden, well sheltered all round with high buildings from the eastward. Mine is a very large public one, with an open, draughty corner to the east, where, unfortunately, all my specimen plants are exposed. Of these I had this season from two to three thousand, all trained to one stem, no laterals, and disbudded to two or three buds. I laboured hard all the summer to keep them in as healthy a growing state as the locality would admit, and never could plants possibly be in a better condition up to October. They were free from disease, and with foliage quite down to the ground. To prevent these losing their foliage, and to increase their strength, I mulched them from two to three inches thick with horse-droppings from a saw-mill that had been accumulating for three or four years. *Perhaps this was unwise*, and added to my failure. If you think so enlighten my understanding, and give me friendly advice not to do so again.

Well, as soon as October set in the plants showed their buds as bright as if French-polished; nothing could be healthier till the wet came day after day, followed by a cold east wind, with fog and frost. They then began to lose all their bottom foliage, and the buds split in two, throwing out here and there a petal, and out of the whole two or three thousand I could not muster six good blooms on my specimen plants, about which I had laboured night and day for nearly six months.

‡ Rendle's Price Current and Garden Directory for 1857. Sold by W. E. Rendle and Co., Seed Merchants, Plymouth, and Simpkin and Marshall, Paternoster Row. Price 6d.

On the other hand, those I took no special care of, merely tying them up in the sheltered part of the garden, were never so fine. How is this to be accounted for? Please to give me the benefit of your opinion. Bear in mind I had four hundred Pompones in large pots placed a few days before the rain in the same aspect as the specimen plants, and they bloomed equally as bad.—SAML. BROOME, *Temple Gardens*.

P.S.—I must not withhold from you another experiment I tried. The rain brought a million of slugs. To preserve my suckers from their ravages I served a tolerable sprinkling of ground unslaked lime to destroy them. Do you think this had any bad effect on the plants, as the next day it rained in torrents?

I forgot to mention my motive for increasing the growth of my specimen plants was from the partial suppressing of the smoke nuisance, which has caused the general improvement of all the plants in the garden, consequently I expected something superior to former years: so they were till this visitation of Providence stepped in, and put a check on them. Every plant in the garden all the summer surpassed former years both in health and bloom.

[The disease among Chrysanthemums, like the Potato Murrain, seems inexplicable and incurable. None of those circumstances mentioned by Mr. Broome could have caused any harm to this class of plants. We had as fine a row of plants as ever was seen—twenty-seven kinds in all—and the ground they were grown in was never cropped before, at least since the flood. It was well drained, well aired, four feet deep, and with hardly a vegetable remain in it. The plants were strong in June when they were put out, and they had only two or three waterings of liquid-manure for the first ten days. No plants could promise better till the very end of September, but we could only pot three plants out of the whole, and some lost every leaf, while others merely went blind. Not far from this row was a large bed of them in very rich garden soil, and one-third of the plants died off completely in the shoots down to the suckers, and all the rest turned out most healthy, and bloomed very well as they were. The failures did not occur merely in one part of the bed, but only a plant here and there over the whole.

Mr. Broome's selection of dark Pompones is very good indeed, but with us *Liliputian* has too much stalk for the quantity of bloom, and we struck it off our list of out-door ones. Our *Il Brasiero* is too yellow and red for a dark, and so is our *Creole*. *Buckingham* we do not know.]

PIGEONS.

VARIETY 3.—THE DUTCH POWTER OR UPLOPER.

THE Dutch Powter, by some English writers called the Uploper, from its springing up or jumping at its mate when playing, is a bird of very different build from the common continental variety; it is much more slender, has a neat round crop, and carries itself very upright. They are not so large or awkward; their legs are longer, but thin, and not much covered with feathers. The purest, I believe, are generally of one whole colour, as white, blue, or black, though reds, yellows, buffs, and even peds are to be had. They are merry, active Pigeons, though, perhaps, not always the best of nurses; still I have had some of this kind that were excellent breeders. It is from this variety that our English Powter is supposed to be descended.—B. P. BRENT.

P.S.—What is the reason that the new-fangled Pigeon fanciers write Pouter instead of Powter?

THE HOUSEHOLD.

LIVER AND BACON.—Perhaps of all the dishes that are cooked in private families there are none more spoiled than this, which is, no doubt, the cause of its not being so great a favourite as it ought to be. To two pounds of liver have one pound of bacon. Cut the bacon into slices a quarter of an inch thick; fry them gently; then have the liver already cut in slices, slant-ways, half an inch thick,

upon which has been sprinkled, for one hour before cooking, some chopped parsley and a small onion chopped fine, a very little nutmeg, pepper, and salt. When the fat is quite hot, put in the liver, turn it over often, and cook as quickly as possible, by which the liver will be light and very digestible; it should be served as soon as possible. When the liver is done, pour some flour and water into the frying-pan until it forms a thick gravy, and stir it over the liver and serve. The great point is the quickness with which the liver is done.

OBSERVATIONS UPON THE POLMAISE METHOD OF HEATING GARDEN BUILDINGS.

By the late D. B. MEEK, Esq., Holmsdale House, Nutfield.

[As endeavours are making to revive this system of heating, and as we have had some inquiries addressed to us upon the subject, we extract the following from a communication to the *Horticultural Society's Journal*. We have had no experience in this mode of heating, and we shall be obliged by information where, in any garden structure, it is employed successfully.—ED. C. G.]

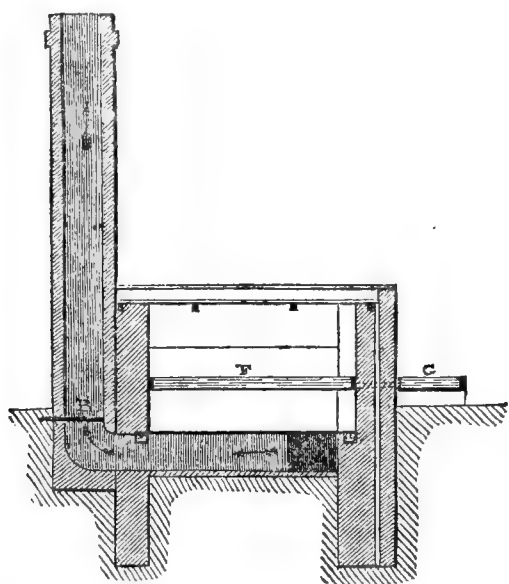
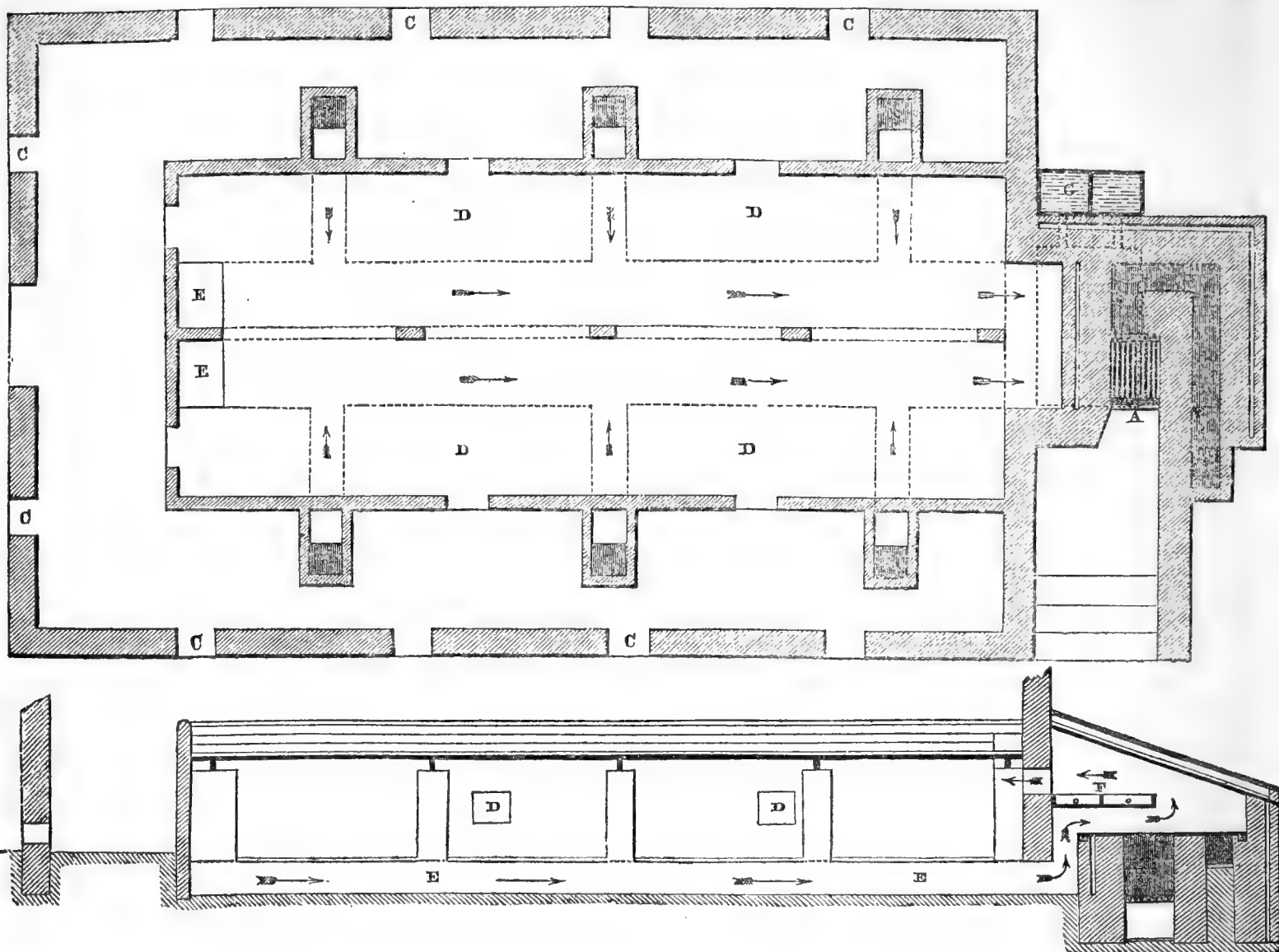
Nature teaches us that the only way to heat air is to bring it in contact with a heated surface,—Polmaise does so. Philosophy tells us that the most rapid means of diffusing heat is to employ that medium which moves with the greatest rapidity, namely, the air,—Polmaise does so. Economy tells us that an agent is an expensive luxury; he takes his per centage; that we do not require his services, nay, they are an obstruction; that our course is to allow the air to diffuse the heat itself, and to warm that air which we do, and not that which we do not want,—so does Polmaise. Common sense tells us that the air in a building which most requires warming is the coldest,—Polmaise takes it first. Everybody cries, "Heat us uniformly!"—Polmaise is the only mode that can possibly approach to it. Having proved the truth of the Polmaise principles of heating, I shall proceed to point out the manner in which they may be easily reduced to practice.

The coldest air in any building (whether room or hothouse) is of necessity on the floor; if it can pass below the floor it will be there; so that if a drain be made below the floor of a room, with gratings opening into it, this drain will be instantly filled with the coldest air of the room. Supposing this drain extends into another building, and the air which it contains is at liberty to pass over a heated surface, and having passed it can again flow back at a higher level into the place from whence it came, it is evident from the principles so recently laid down, that the whole air of the room will flow over this heated surface and become warmed, and that such currents of air will never cease till the air of the two buildings is at nearly the same temperature; and consequently, that in proportion as we burn fuel, and heat the surface employed, so must we by this means raise the temperature of the air passing over it.

Subjoined is a plan and section of the hothouse and stove, showing the simple mode in which I propose to carry out the Polmaise heating.

The outer line of ground plan represents the walls of a hothouse. The openings, C, are external ventilators for the purpose of admitting fresh air; these are exactly such as might be employed for any other system of heating; they have no necessary connection with Polmaise, and the heating principle acts, whether they are closed or whether they are open. It is evident that when open they admit fresh air into the house; and however cold the weather, any air admitted by them, instead of cutting the plants, as is the case when side-sashes are open, will immediately, from its great specific gravity, descend at once into the cold-air drain, and become warmed before coming in contact with the vegetation within the house. The number left open will, of course, be dependent on external circumstances; and when they are all closed, the hothouse resembles any other hothouse that is closed, and thus heating and ventilation are kept apart, the requirements of the two necessarily being different. Within the external walls is a walk round three

sides of the house, in which are openings, E, leading into drains, these drains converging into a main drain, as shown by the arrows; these drains are formed of brick on edge-sides, and duchess slates for roof, the soil forming their



floor. The main drain is four feet wide and one foot deep, so that by laying a brick flat and four courses high in the centre, and bricks on edge at the sides, two common duchess slates reach to form the roof, and on these is spread some sifted soil to make the drain air-tight; the centre brickwork forms a support on which in several places to build up single brick piers to support the iron rafters which carry the slates, on which rests the plunging bed, as shown in longitudinal section. This main drain, which should be slightly on the descent towards the chamber, pierces the end wall of the hothouse, the foundation being left out at that point, the end wall of the house being there carried by York flagging, with a centre support; and thus the means are provided

for allowing the cold air to travel from the house to the chamber. The openings at E, in the hothouse at Nutfield, are regulated by sliding lids, made of slate, for the purpose of experiment; this, for practical purposes, is unnecessary, and in many cases it will be found very convenient to make the cold-air openings in the centre of the house concealed by some ornamental stage, the floor of the walk forming the roof of the cold-air main drain; or handsome ventilators might be inserted at once in the roof of the main drain, to take down the cold air. These points of detail architects will arrange to suit different places, the great and essential point being to provide a means for the cold air at the extreme end of the house to pass to the hot chamber. The outer wall of the hot chamber is built of $4\frac{1}{2}$ -inch brickwork; this chamber is air-tight, as far as regards the external air, having two openings on the side next the house on different levels, the lower one to admit the cold air, the upper one to allow its return when heated. The stove occupies the chief portion of the chamber, standing isolated within it, except at the points where the fuel is supplied and the ashes removed, and where the return-flue passes into the chimney. The area left between the wall of the stove and the wall of the chamber is two inches, except on the side next the hothouse, where, of course, there is a larger area to allow the cold air to rise and flow over the plate; but it will probably be found desirable to sink the top of the stove to a level with the cold-air drain. The stove is formed of four walls of 9-inch brickwork; the outside measure is 5 feet 5 inches long, 4 feet 4 inches wide; the internal measure, therefore, 3 feet 10 inches long, and 2 feet 10 inches wide. Another wall of the same substance is carried up between the two ends, but not in the centre; it is 16 inches from the wall of the stove next the hothouse, and of course leaves a space of 9 inches between itself and the farther wall. It will be seen by plan that this wall and the one next the hothouse form

the actual furnace or fuel box; in part of their length, where such is the case, they are built of fire-bricks, as are also the flues; and wherever the walls are likely to be much heated, they are Stourbridge fire-bricks set in the same clay, being, in my opinion, more durable than Welsh lumps; it will be well to parge the outside of the walls of the stove. The stove is 3 feet high, which allows 3 inches for paving of ash-pit + 1 foot for depth of ash-pit + 3 inches for depth of bars + 1 foot 6 inches for depth of furnace from bars to plating = 3 feet. The iron top is formed of three plates, with a view to allow of expansion; two of these plates have extending rabbets, so that when laid in place they have this appearance.



They are 1 foot 6 inches one way by 3 feet 6 inches the other, so that when laid in their place, and the space for expansion between each allowed, they form a surface of 4 feet 7 inches by 3 feet 6 inches. This, by calculation, will be found to give them a 4-inch bearing on the four outside walls of stove. Along the wall of stove next the hothouse a course of thin brick is laid, not close to the edge of plating, but half an inch from it. The two end walls are carried up three courses higher in 4½-inch work, and so also the outer wall; and between all these and the edge of plating there is a half-inch space; the purpose of this groove is to fill it with sand, so that the plates can expand and squeeze up the sand, while, when they contract, this will follow back and keep the joint air-tight. I am assured, however, by practical men of great experience, that it will be found quite unnecessary to have the plates cast in three pieces; that it would suffice if cast in one piece, provided it were cast with a loop round the edge, which should fall into a groove of sand, and that the plate would then expand in the loops: this will greatly lessen the danger of exhalation. The situation of the damper, as shown in section, is bad; it should be placed exactly at the junction of the flue with the chimney; and it will be found to economise fuel, by preventing the loss of heat, if between the brickwork forming the end of chamber and the stove some non-conducting material, such as hair-felt, be placed, and also if double doors be used for the furnace. I find the only loss of heat that takes place in the apparatus at Nutfield is from the furnace-doors and the bricks around them, and this might be prevented by the above plan. The doors employed are Sylvester's patent, which, for all purposes where the regulation of draught is required, seem to be the best that can be imagined; there are no hinges to rust, or machinery to get out of order, or screws to untwist; they simply hang on a frame, in which they slide, the edges of the door and frame being ground to fit; and another advantage which they seem to me to possess is, that if any explosion should take place within the stove, from a collection of gases (and all economic stoves, where of course the combustion is slow, are liable to such occasionally), instead of the boiler or plates being blown out of their place, these doors would be lifted outwards, and the evil consequence avoided. Within the chamber, extending between the two end walls of the stove, and bearing slightly on the end wall of the hothouse, is a tank of water, F, divided longitudinally, four inches deep, as shown in section, also by dotted lines in ground plan, supplied by a check cistern from the outside, G, also of course divided; this may be furnished with a tap, by which to empty it, or at which the gardener can always obtain chilled water.* The roof of the hot chamber is formed of double slating, with a layer of McNeil's hair-felt and two or three inches of sawdust between, and the upper surface is never warm. From these arrangements it is evident that the entire air of the hothouse, must flow over the plating, through the chamber, and back over the tank of water (as

* This cistern or tank is of very unnecessary extent. It is five feet long by three feet six inches wide. If it were eighteen inches or two feet, it would be ample to supply the moisture necessary, and this should be divided as in plan. For a conservatory, a single trough nine inches wide would be amply sufficient, and even this, as fires are only required in such structures in winter, when much moisture is not required, would almost be unnecessary. It will be observed from the position of the tank, that its under surface forms a sort of roof to a flue, compelling the cold air to traverse the hot plate before returning to the house, so that if the tank is dispensed with, some other means must be taken to secure this, such, for instance, as a sheet of iron plating or thin casting. My present tank will evaporate fifty gallons per week.

shown by the direction of the arrow in plan and section), and be returned back into the hothouse in a heated form through the upper opening. Here it is received into a large brick pit (as shown by inner lines in plan), and it is allowed to escape through slate ventilators from the sides and end of this pit. Iron bars extend across this pit, and on these slates (thick duchess) are laid; upon these some pebbles and a few inches of tan as plunging material. To those who have been accustomed to hot water I may say, that if they regard the cold-air main drain as the return-pipe, the chamber as an air-boiler, the brick pit as a hot-air tank, they can be at no loss to understand either the arrangement or the principle, and to perceive that there is no difficulty whatever in reducing those principles to practice. And this brings me to the third consideration I had proposed, namely, the advantages likely to result from the employment of Polmaise heating; and the relative importance of these advantages will be differently regarded by different classes of persons. The wealthy lover of horticulture will first inquire, Can I grow my plants better? He who is equally fond of it, though with less means, will inquire first, Can I grow more cheaply? while the grower for profit will consider both of equal importance. I will consider cost, and first the original cost: this will be regulated by the purpose for which it is required, similarly to other heating powers. An apparatus of equal power with mine may be erected for £20, dependent on the price of brick and slate. It must be considered that for this sum a great amount of bottom-heat is secured, from 82° to 94° Fahr., over a bed twenty-two feet six inches by nine feet wide, together with the requisite amount of atmospheric heat in a house twenty-eight feet by seventeen. Compared to hot water, I am sure the first cost does not exceed one-half what the latter would be to secure the same amount of bottom and atmospheric air in the same house in the same locality. But the way in which the economy is best viewed is by considering that the entire expense of the distribution of the heat is necessarily saved by the air distributing it by its own motion, and that the expense of the air-boiler and setting is about the same as the water-boiler and setting; the expense of the tank it is fair to charge not to the heating but to the evaporation, as moisture must be supplied in some way under any mode of heating.

The working economy I take to be equally certain. If the stove is properly built there need be but little loss of heat, the heat of the stove being all swept into the house by the currents, except that portion which is lost at the junction of the stove with the external wall of chamber; while in the hot-water apparatus, if the boilers are set externally (and it has not been found advisable to set them within the house), there is great waste of heat,—I do not speak of every individual case, but of the generality of cases; and since a given quantity of fuel can only evolve a given quantity of caloric during its combustion, it is quite evident that that system must prove most economical in the use which secures the most caloric for the purpose required. With regard to the amount of caloric passing up the chimney, Polmaise stands on the same footing with all other economical stoves in which the combustion of the fuel is regulated by the supply of the oxygen and by means of Sylvester doors, and dampers in the chimney; the amount of heat lost in this manner is inconsiderable. Some heat must always be sacrificed in this manner in all systems; for if there were no caloric in the chimney—that is, if the air in the chimney were not rarefied—there would be no current of air to the fuel, and the fire would not burn; and if this is to be saved, it can only be done by bringing the chimney through the house,—in fact, by again returning to the flue system.

Having noticed the advantages of Polmaise heating, I have no wish to conceal its dangers. Man may take the principles of Nature, and when he reduces them to practice, he finds that he has introduced some human imperfection, and so it is with Polmaise. A boiler may burst, or a pipe choke up with a hot-water apparatus, and a gaseous exhalation may escape from the stove of Polmaise. The compounds of sulphur and oxygen appear, even when much diluted, most prejudicial to vegetable life, and the effects of the bursting of a flue are well known; and this is the point of danger. I prophesy that no winter, however severe, will affect the operation of Polmaise; but all the beauty of this principle of heating must be sacrificed unless we can secure

the chamber from gaseous exhalation. With this view, let me urge upon all those who may employ the Polmaise principle to be extremely particular in the manner in which the stove is built. Let the outside be parged; let it be constructed of at least nine-inch brickwork; and if the iron plate can be cast in one, with a projecting rabbet on its under surface, and this rabbet dropping into a sand groove, it appears that all possibility of exhalation must be precluded. Indeed, if even this were insufficient, it is hardly probable that a sound principle of heating should be lost for want of some ingenious mechanical contrivance to prevent exhalation. However, I have thought it my especial duty to point out the weak points of Polmaise; and while I acknowledge that I think the form of stove I have employed has many advantages, and especially the retention of the heat, I by no means wish to prevent others of a more complex and expensive, though probably of a more powerful character, being employed. All the merits of my stove, whatever these may be, are due to Dr. Arnott; but I trust that the great principle of Polmaise, the conditions under which the stove is placed, will never be lost sight of; for on no other principle can atmospheric heat be so naturally, so cheaply, or so uniformly diffused.

During the last two months I have had repeated opportunities of making thermometric experiments in the hot-house at Nutfield, and also other trials of a very interesting character, and leading to very important practical conclusions. The hot air, as it enters the hothouse from the chamber, passes beneath the bottom of the plunging bed, exactly at its point of entrance; one of the slates on which the bed rests has been removed, leaving an area of about two feet, or half the hot-air opening; and by this means a thermometer can be suspended in the hot blast at its entrance. I have seen this indicate 174° Fahr., but it commonly ranges from 120° to 150° . When about the latter point, another thermometer suspended one foot above the former will indicate from 85° to 90° ; while a third, on the same level with the second, but at one foot horizontal distance, will indicate only 65° ; and other thermometers hanging in different parts of the house, at one end or both, or in the centre, indicate 63° ; while even a thermometer on the floor, at the extreme end of the house, will indicate 61° . The only unequal portion extends about two feet around the hot-air opening, and in the ridge of the house, where we must always expect to find the temperature several degrees higher. The temperature of the plunging bed varies from 80° to 92° Fahr. in different portions, which is accounted for by the fact, that much of the hot air escapes through the open ventilators before reaching the extreme end of the bed; but for many purposes this variation is desirable, and all this may be regulated, according to circumstances, by the side ventilators. The temperature of the plunging bed is peculiarly steady, arising from the material being a bad conductor of heat, slow to heat and slow to cool. The inference to be drawn from all the experiments I have made is, that there will be no occasion to provide any means of distributing the hot air; it will equally diffuse itself. Another point I have determined is, that the lower the external temperature, the greater the proportionate difference between the hot-house and the external air, arising partly from the principle of compensation already noticed. Thus the average temperature of the hothouse above the external air, with moderate fires at night, is about 20° ; but on the only occasion in which I have yet had an opportunity of testing it in frost, the house at night was 30° above the external air, and never during the night was the difference more than 26° . It was a quiet, clear, frosty night, the external air at 31° Fahr.* I find the uniform range of the differential ther-

* Another experiment was made by closing four of the cold-air orifices, reducing the exit of the cold air to two one-foot openings, and I could not detect that the temperature of the house was always affected, while it was quite evident that the velocity of the currents in these two was greatly increased; neither could I ascertain that the uniformity of the temperature was at all affected. The drains left open were those at the extreme end of the house. Had these been closed, and those near the chamber opened, I think it probable the uniformity would suffer. I also closed all the hot-air ventilation, allowing only the escape of hot air at the opening close by the hot chamber; neither did this affect the general uniformity of the distribution. These evidently lead to the conclusion, that a small amount of cold-air drain will prove sufficient; and also that any chamber or means of diffusing the hot air is entirely unnecessary, except where required, as at Nutfield, for the bottom-heat. This experiment has not

mometer, from six o'clock in the evening till eight in the morning, is from 62° to 57° or 58° . It must be remembered that this is legitimate atmospheric temperature. There are no means within the house of affecting the thermometer by radiation, either from pipes, or from bricks heated by pipes, or by hot flues, and then attributing the thermometric point to atmospheric temperature, which is partly owing to radiation, a very common error; but it is the temperature of the air taken by a thermometer suspended against the upright side-sashes of the house. The house itself is a span-roof, containing about 4000 cubic feet of air; it is glazed with sheet glass, the ends are both glazed, and the upright side-sashes are three feet in height, standing upon stone walls four feet high. It is situated in a kitchen-garden, partly walled, on a very considerable elevation, as will be evident when I state that, though only twenty miles from London, I can from my own grounds, on the same level, distinctly see the Downs in clear weather. I have purposely abstained from using any covering material, such as asphalt shutters, with a view of testing the heating powers. These facts entirely corroborate those obtained at Polmaise by Mr. Murray, which were published in *The Gardeners' Chronicle* of the present year.

TO CORRESPONDENTS.

DEW (*W. Elliott*).—Dew is neither more nor less than moisture invisible whilst dissolved in the air, rendered visible by being condensed from it by coming in contact with a much colder body. Saussure, Prevost, and others, have thought that electricity had something to do with the phenomenon, but they are all explicable by the laws known to regulate the effects of caloric. If you require full information on the subject, read Dr. D. P. Thomson's *Introduction to Meteorology*.

PLANTS FROM ABROAD (*Italicus*).—The names are wretchedly spelt. We can only make out those numbered as follows:—1. Is a pretty Pea flower; will do in a greenhouse in summer, but is most impatient of cultivation. 2. A pretty Convolvulus-looking climber, not difficult to manage in a greenhouse in summer, but very bad to keep in a stove in winter. 3. A *Salvia*-looking flower of no great beauty. 6. An old classical plant from the Cape, with Pea flowers and Mimosa-like leaves; would live out in the south of Ireland with a slight protection. 8. A tall, herbaceous, greenhouse plant, with flower-spikes like those of *Verbena venosa*; not worth much. 9. A beautiful-leaved, greenhouse shrub in England, but never flowers; the flowers like a Locust-tree. 10. An old Indian shrub, very handsome there, but not a favourite tree. 11. A stove climber; but this kind of Convolvulus is only a pretty little Indian annual, and only pretty in a wild state. A botanist collector gathers all seeds he meets with, an amateur only such kinds as strike his fancy, therefore his seeds are more worth notice; but the practical man at home can alone determine the value of such seeds. All in this list have been tried repeatedly, and found, with the exception of *Virgilia*, not to be worth culture. *Virgilia Capensis*, three or four years old, can be bought for a few pence.

SMALL GAS-HEATED CONSERVATORY (*E. C.*).—You shall be answered fully next week.

REMOVING AN ARAUCARIA (*H. L.*).—The best time for removing your Araucaria nine feet high would have been in October, but if taken up with a good ball of earth during mild weather, removed to a dry soil, firmly staked with three stakes, and well mulched, we should not object to removing it this month. It requires a sheltered situation. All evergreens are best moved in October. If by *thinning* you mean pruning, April is the best season for Laurels, Hollies, and such shrubs.

WINTERING PELARGONIUMS AND GERANIUMS (—).—The large greenhouse would be the best if you had a stove to exclude the frost, otherwise keep them in your windows. See what Mr. Fish has said about "Window Gardening in Winter." It applies to your case exactly.

SUCCESSION OF PEAS (*A Young Gardener*).—Fairbeard's *Champion of England* and Hair's *Mammoth* sown at the same time, and simultaneous sowings of them repeated as soon as the plants from the next preceding sowing are ready for sticking, will keep you supplied. There are no better Peas grown. If you persist in having none but tall varieties, sow *Thurston's Reliance* instead of Hair's *Mammoth*. You might grow Vines and Peaches in pots at the south-west end of your Vinery.

CHARCOAL (*An Old Subscriber*).—Can any one of our readers state how wood should be burnt into charcoal? Except on a very large scale it seems to us a waste of material.

LUCERNE (*A Subscriber*).—It is sown not planted. The seed should be inserted during March or early April in shallow drills.

FRUIT-TREES (*A Constant Subscriber*).—The *Duc du Telliers* is a good Nectarine, and one worth cultivating. You may plant out fruit-trees in the open ground which have been grown in pots, and they will

always been uniform in its results; sometimes when only two cold drains are open the temperature of the house is less by two degrees than when all are open, but I can never detect that it affects the uniformity of the distribution. It must also be understood that the temperatures named are not always the same; but the most important and best ascertained point is the equal diffusion of the heat.

do quite as well as others, only see if the roots have been coiled round the sides of the pots, and if they have gently break the balls, and have the coiled roots gently drawn out as straight as possible before you cover them with the soil. Strong canes of Vines without roots, if coiled round a pot and covered with soil, will produce roots and grow, but will *not* bear fruit the first season. You would be just as soon, and have far better plants, if you were to put in a few eyes next month, and grow them on rapidly during the summer.

PEACH-TREES (*Rusticus*).—Your Peach-trees throwing up suckers is not right, and ought to be checked immediately. Remove the soil from the roots wherever you find the suckers appearing, and cut them off from their origin. You may also remove any roots which show a disposition to send up suckers. Although your *Gladiolus* would have been better planted earlier, you may still do so with fair prospects of success.

POMOLOGICAL SOCIETY (*A Gardener in South Wales*).—It is not necessary to be present when elected. You need only write to the Secretary expressing your wish, and he will arrange for you.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

CREWE. February 3rd and 4th, 1857. *Secs.* S. Sheppard and D. Margelts, Esqs. Entries close January 15th.

KENDAL. At Kendal. February 6th and 7th, 1857. *Sec.* Mr. T. Atkinson.

LIVERPOOL. January 28th, 29th, and 30th, 1857. *Secs.* Gilbert W. Moss, Esq., and William C. Worrall, Esq., 6, Lower Castle-street. Entries close on the 10th of January.

NOTTINGHAM CENTRAL POULTRY ASSOCIATION. January 13, 14, and 15. *Hon. Sec.* Frank Bottom. *Secretary to the Canary Department,* Jno. Hetherington, jun., Sneinton.

PRESTON AND NORTH LANCASHIRE. January 21st and 22nd, 1857. *Sec.*, Ralph Leigh, Esq., 125, Church Street, Preston. Entries close December 13th.

SOUTH EAST HANTS. At Fareham, January 26th and 27th, 1857. *Sec.* Mr. James James. Entries close January 14th.

N.B.—Secretaries will oblige us by sending early copies of their lists.

THE RESULTS OF 1856 AND THE HOPES OF 1857.

THE fact of a thing occurring but once in a year would appear to be considered a sufficient apology for any deviation from the beaten track. Those who live in London are familiar with boxing-day. They know the incessant rapping all round the hours of the 26th of December. This year we had a new claimant on our generosity—"Please, sir, the men, sir, who does the sewers, sir; very unpleasant trade; underground all day, sir. Hope you will be so kind as to remember us." Now, we were tired of giving, giving, giving all day long, and we remonstrated. "Sir," said the man, "it is only *once* a year." So says the grotto boy when he extends his oyster-shell in August, the sweep when he holds out his shovel in May, and the real London boy when, on the 5th of November, he steals for a time one of his mother's spare rush-bottomed chairs, and stuffs his every-day suit with straw, surmounts the whole with a cocked hat, decorates the hands, one with a dark lantern, the other with a bunch of matches (by the way, we expect the latter article will soon be superseded by a box of lucifers; the old brimstone match, which used to explore the recesses of the tinder-box till it found the congenial spark, will soon rank with phoenixes, hackney-coaches, salamanders, and watchmen), and claims your contribution, for it is only *once* a year.

Friends, patrons, contributors, and readers, we wish you a hearty welcome in THE NEW YEAR. May it come to you all under happy auspices, and may the blessed feeling of hope be strong in your hearts. Forget all that can be painful in the recollection of the past year, and, retaining only the wisdom and experience which you have, perhaps, bought as it hurried on, use them to insure the success that awaits honest and persevering effort. This is not our usual strain, but recollect the occasion, kind friends; "IT IS ONLY ONCE A YEAR."

We cannot proceed on our New Year's progress without some note of it. Last week's shows belong to last year, and chickens of the past month are now to be classed with adults, except in especial cases.

The year 1856 opened gloomily to the minds of many people who wished well to the poultry movement. Some said the thing was wearing out, others said shows were on the decline. One thought the whole thing must be given up, because *Cochin-Chinas* only made *three guineas* each, and his neighbour, acting like those who every now and then, on the

strength of the assertion of some obscure prophet, forbear to make any provision for April because the world is to end in March, sold off valuable birds for a trifle. He believed, had he not done so, that there would have been no sale for them. He has since discovered his error, and finding he cannot re-purchase them, he works hard to persuade himself and friends that the whole pursuit is at an end.

Articles written at this time last year will show that we never held these opinions. We then stated that we believed the pursuit to be in a healthy state. We said we thought the number of shows should decrease, and that three or four held in one county should amalgamate, and form one large one. We do not alter our opinion now; we think our first expectation has been realised, and we look to the advent of the other.

It cannot be expected that all shows will be uniformly successful, even with everything in their favour. How much less can it be looked for when two or three occur on the same days, and this at a time of year when fowls will not bear much fatigue!

The demand for poultry has never been so great as during 1856, and the prices have been well sustained. In some instances 1856 will stand alone. At Liverpool Mr. Davies sold two pens of *Spanish* for £200. Mr. Moss refused £40 for a young *Spanish* cock. *Dorkings* were sold from £10 to £20 each, and the sale has maintained itself up to Birmingham, where Mr. Davies sold his *Spanish*, and Mr. Donne his *Dorkings*, for £10 10s. each. We will, however, say a few words on each of the principal classes.

So many good *Spanish* fowls were never seen as in 1856. The birds that were imagined and desired in 1851 are common now, and perfect combs and faces are the attributes of a class, rather than the distinguishing marks of a first-prize pen. The competition has been excessive. Mr. Davies has been uniformly successful; Mr. Rake re-appeared with his usual good fortune at Birmingham; and, although Captain Hornby has not yet assumed his old place, it has been rather the condition than the quality of his birds that has made him run second on some occasions.

Dorkings still improve. There were at Birmingham hens that weighed 8½ lbs. each. This will be best appreciated when it is recollected that 9 lbs. is an *unusual* weight for a cock. The principal prize takers in this class have been Mr. Wright, the Rev. S. Donne, Captain Hornby, Mr. Botham, Mrs. Fookes, and Mr. Loder.

Of the *Hamburgs* it may be said that the Golden varieties, both Spangled and Pencilled, have outstripped their Silver brethren. The latter can hardly be said to be stationary; they have retrograded, while the Golden have much advanced. Messrs. Worrall, Archer, Thompson, Fellowes, Botham, and Dixon have been the most successful with them.

No birds have more improved than the *Polands*. We may say of these as we did of the *Spanish*, "certain things were desired, and they are accomplished." Combs have disappeared, beards have become general, and the topknot, which at one time was the chief, almost the only point looked at, must now be allied to perfect plumage. Mr. Coleridge, Mr. Greenall, Mr. Bush, and Mr. Edwards have signalled themselves much in these classes during the year.

Our old friend, the *Cochin*, is quietly settling down on a deserved popularity, but the value of good birds has certainly doubled during the past year. There is a growing demand for them, and those who have them may depend on a sale at remunerating prices. Lord de Blaquier was very successful at the summer shows. Mr. Punchard, the Rev. Mr. Gilbert, and Mrs. Fookes have shown beautiful Buff birds. The honours of the Grouse have generally fallen to the Rev. G. Hodson; but Mr. Punchard, Mr. Bridges, and Mrs. Ford have all had their share. Messrs. Peters and Chase have shared the distinction of White birds with Mrs. Herbert, and Mr. Fowler has monopolised the chicken honours.

And the *Brahma Pootra*, the vexed question which, like the standard so graphically described in Scott's account of Flodden Field in *Marmion*—

"Advanced, forced back, now high, now low,
The Brahmas sunk and rose."

Encouraged by offered prizes, they have made a goodly display; discouraged by prizes withheld, their numbers have decreased. Mr. Davies' celebrated old bird died three days

after Anerley, where, for the first time in his career, he was not judged worthy of a first prize. It is not our province here to speak of the merits or demerits of the breed, but we will say this much—those who keep them will do so, though they should be erased from every prize-sheet in the kingdom.

Nothing more can be said of the *Game* than that they are perfect, and invariably shown in a condition that offers a lesson which should be learned by every exhibitor.

Much care is evidently being taken to breed *Bantams*, and the Black, White, and Game are as carefully kept and exhibited as the Sebrights. There is a great and increasing demand for Game, and if any one could breed some good Duckwings it would be a valuable speculation.

Rouen Ducks have lost weight during the year; but, as a compensation, the colour both of the plumage and beak is now thoroughly understood. We doubt not next year it will have to be reported that they have gained weight.

Aylesbury Ducks have shown well throughout the year. Mr. Fowler has been most successful. In January Mr. Weston exhibited three immense birds at Aylesbury. We have seen nothing so heavy since, nor do we think there have been such birds shown in 1856 as we had in 1855, when Mrs. Ford and Mr. Davies contested the honours of the class.

Turkeys and *Geese* are both on the increase. In the latter it may be fairly said that the average of the breed is increased by 3lbs. per head. Let the number of *Geese* consumed in a year be multiplied by three, and it will be seen that many tons of "*Goose*" have been added to the food of the country by the poultry movement.

The market is not yet supplied as it should be either with poultry or *Eggs*. Of the latter 310,000,000 have been imported in eleven months. We shall recur to this when the cessation of shows will give us time and space.

Our task now draws to a close. We have endeavoured to give a clear and impartial account of the year. We are happy to be able to make it a cheerful one. There has not been any cause for depression. Good birds have made full prices, and all have found a remunerative sale. Most shows have paid their expenses. In some instances where they have not, the causes have been so manifest that they can be easily avoided for the future. Rumours were rife during a part of the year that our great Show at Birmingham was to be given up, but an unusually well-attended and successful meeting has set all such rumours at rest.

The quantity of plate given during the year for prizes has been almost incredible, and it increases in value with every show. It would be unfair not to notice the twenty-guinea prize at Colchester.

There have been fewer causes for disagreement during the past year than usual. There have been some, but they are of that nature that they will right themselves, and dispense us from the unthankful duty of finding fault.

When we addressed our readers at the beginning of the past year our work was new to you, at least in the connection in which it stood. Since then we have tried honestly and zealously to be just and fearless, to tell the truth impartially, and to withhold nothing that could interest our readers. We have never made a remark or comment with the intention of giving pain; if unconsciously we have hurt any one's feelings we ask his forgiveness. Like the seaman returning to port after a long voyage we commit everything that is not productive of pleasure to the deep, there to be forgotten. Even in the trifling interests and contests of Poultry Shows there are sometimes angry feelings. They belonged to the past year. Let them be freely forgotten by all parties, and let us hail with pleasure and gratitude THE BEGINNING OF 1857.—B.

THE PHILOPERISTERON SOCIETY.

THE annual grand Show of the Pigeons belonging to the gentlemen of this Society was held on Tuesday, January the 6th, at Freemason's Hall. From the known enthusiasm of the members and the value of their respective studs of birds, a very superior Show may always be anticipated; but, on this occasion, the expectation of the most ardent was surpassed; it may be truly said that there never was got together at one place a collection of birds equalling those that constituted the Show.

At the head of the room were Mr. Butt's collection of magnificent Powters, the central pens being occupied by the white birds, which are unquestionably superior to any that I have ever seen at a public show. A very large collection of Carriers, both old and young birds, was shown by Mr. Hayne, all of surpassing excellence. The Short-faced Tumblers were equally well represented, in proof of which assertion I have only to mention the names of the exhibitors. Almond Tumblers were shown by Messrs. Esquilant, Percival, and Lucy; Mottles, by Messrs. Percival and Esquilant; Baldheads, by Mr. Harrison Weir; and Barbs by Mr. Fossick. One of the most attractive pens was filled with a collection of Blue, Black, Silver, Red, and Yellow Magpies, belonging to Mr. Wicking; the snowy whiteness of their wings, contrasting with the various-coloured plumage of the bodies, produced a charming group most covetable to behold.

The Jacobins of Messrs. Bult, Maddeford, and Weir were very beautiful, and the Fantails of the last gentleman of their usual excellence. The Red Barbs of Mr. Percival, and the White Barbs of Mr. Weir, were as perfect as it is possible to be obtained.

The annual Exhibition of the Philoperisteron Society constitutes a most pleasant *r  union* of the members and their friends. There is no competition for prizes, but the best birds of the members are brought together, and their friends invited to inspect them; and the annually increasing number of those who gladly avail themselves of their invitations is alone a sufficient proof of the excellence of the Exhibition.—W. B. TEGETMEIER.

ON THE EXTRA CLASSES AT POULTRY EXHIBITIONS.

HAVING now attained very extended experience in matters connected with Poultry Exhibitions, I can confidently assert that there is not, in my opinion, any feature connected with such meetings that so vitally affects the state of the ultimate receipts as well-filled and much-varied "*extra classes*." I naturally am one of the last of amateurs who would estimate lightly the great importance of extreme rivalry in our usual and accustomed varieties. I would, contrariwise, encourage by every available means so desirable a result. To poultry amateurs generally, and the cognoscentic more particularly, hardly-won laurels and "*neck-and-neck*" competition will ever exact abundant attraction; but numerous as are these classes of attendants in the aggregate, they are certainly far surpassed, numerically considered, by those individuals who, but little versed in such matters, view all classes with closely-assimilating interest, but whose attention, as the public, rests more particularly on any object that presents extreme beauty or novelty as its chief recommendation. It is, then, from this cause I now venture to express my own conviction as to the absolute advisability of giving an increased amount of attention and encouragement to these particular entries, from the fact that they draw together a greater amount of sight-seers than the ordinary classes, and, consequently, influence the amount received for admission in exact proportion.

If by any one my statement is regarded with feelings of scepticism I would wish such party to notice particularly how constantly thronged the avenue allotted to these "*oddities*" always proves itself to be wherever it so happens that it is well represented. It is in the extra class only any *really* new description of poultry can hope for admission at the onset. No Judge, with any already classed general variety, could possibly tolerate their presence as competitors; and hence, were they to so appear, "*disqualification*" could be the only result; whilst certainly it is the desire and interest of poultry fanciers to cultivate, improve, and fairly test any new comers that may thus publicly court a disinterested trial. No doubt exists that there are still many *new* species of poultry existent in foreign climes, that, if imported and carefully acclimatised, would add alike to the interests of the exhibition-room or the cooking-kitchen, and that, too, although at the present hour quite unknown to any of us.

It is for all such poultry I now plead the opportunity of

"an introduction." But as an increased revenue is always desirable to Poultry Show Committees, I would press the matter even a step farther, and solicit—at least, in some localities—a few inexpensive premiums, to be placed at the discrimination of the Judges, for beauteous and valuable descriptions of water-fowls, pheasants of any foreign variety; in fact, to any really novel introduction of birds whatever. Such prizes, although at the onset apparently entailing some little additional outlay, would, with certitude, prove a very remunerative speculation "in the long run;" for, supposing the entries undeserving, the awards would naturally not be made, and the entrance-money for pens erected would fully liquidate the advance; whilst, on the other hand, wherever this class happened to contain valuable, unique, or gorgeous-plumaged birds, every individual attending as a spectator, when leaving, serves, as it were, the purposes of a living advertisement to induce others to visit likewise. It is really surprising the effect of such a class on the revenue of the Society, and the throngs of otherwise uninterested individuals it brings forward—parties who, only superficially entering into poultry matters, simply regard ALL the general classes alike as "rows of cocks and hens." Look at the results at Newcastle-upon-Tyne, where this plan has received a fair trial; their finances are in a thriving condition, and attributable in no mean degree to the cause I have endeavoured to advocate.

I could instance several other cases, but will content myself by stating, I never knew any instance where the introduction was the subject of after regret, but, contrariwise, of congratulation, as producing increased means of usefulness by affording reserve funds for improving the value of the premiums for other classes at future meetings. I am fully aware of the objection that may be raised as to this "break" upon the legitimate first intentions of a Poultry Show; but when I advise a really limited amount of prizes, and the result produces a far-increased public interest, "expediency" will draw the balance in its favour.—EDWARD HEWITT, *Eden Cottage, Sparkbrook, Birmingham.*

THE ESSEX POULTRY EXHIBITION.

THE fourth meeting of this Society took place on December 31st and three following days. We published last week the prize-list, and it gives us great satisfaction to state that the Exhibition far outvied any of its predecessors. Many parties were impressed with the conviction that the all but simultaneous Poultry Show to be held at the Crystal Palace would sadly interfere with the Colchester arrangements; nevertheless, somewhat beyond five hundred pens competed, and it is justly true to state, that very rarely have we seen any collection so perfectly free from indifferent specimens. The support this now well-established Society receives from the surrounding nobility and aristocracy is also another subject of congratulation, and the arrangements of the Committee generally are highly deserving of our warmest commendations. The Plate Prizes were truly excellent, the principal one being a very chaste silver flagon, ornamented with the really appropriate emblem, a Game Cock; it certainly was of the full value affixed, namely, twenty guineas. The Cups were likewise of really *intrinsic* value.

In *Dorkings* the Colchester Show stood pre-eminent; they constituted, with the *Game* classes, a first-rate Show, even had no other variety been represented. The immense improvement manifested throughout both these classes was the subject of universal congratulation. In the *Dorkings* we noticed that the rosy-combed fowls gained ground considerably on their rivals in point of size; and we were much gratified to notice that this was without any approach to coarseness whatever. The *White Dorkings* were also superior. The *Spanish* classes were good, the chickens especially. Contrary to the general results of Shows of Poultry in this part of England, the *Hamburgs* proved themselves a first-rate collection, many neighbouring amateurs devoting considerable time and expense to breeding them. The *Polands* were scantily represented. In *Sebright Bantams* there was not anything worthy of particular remark; still these classes, as a whole, were above mediocrity. The class for *Black Bantams* has been seldom better filled, either as to the quantity of pens or their perfection. The *Cochin* classes,

although somewhat restricted in point of numbers, contained many highly commendable specimens of careful breeding and management, the *Partridge-coloured* being, perchance, the best of any.

Brahma Pootra fowls competed in but small numbers, but exhibited an extraordinary variety of colour and character, the matching of most of the pens being very indifferent also. Some excellent *Andalusians* took first prize in the Extra Class; and *Silkies*, *Serai Taook*, and *Ghondook* fowls were also exhibited of great excellence. The Aquatic portion of the Show was worthy of any exhibition, and the improvements here on previous seasons were most marked. The *Pigeons* were a treat to any visitor whose fancy lay in that direction, and obtained much attention.

It is satisfactory to state that the weather was fine throughout, and the attendance proportionately great. Every attention and courtesy was manifested by the Committee; but the plan of sales was scarcely satisfactory, and contrary to the general usages in Poultry Societies. Future meetings will, no doubt, evidence an improvement in this respect; and we merely allude to the matter that it may the more directly obtain the reconsideration of the Committee, who have continuously striven to render their Show popular and deserving.

G. Andrews, Esq., of Dorchester, and E. Hewitt, Esq., of Sparkbrook, near Birmingham, were the Judges.

POULTRY AND PIGEON SALE.

AT Mr. Stevens' last sale, on January 6, there were some exceedingly good *Cochins* from the Rev. G. Gilbert. Two pullets of this year sold for £2, and doubtless would have produced much more, but they were not exhibition birds, one having a twisted comb.

For several of Mr. Coleridge's *Polands* there were no bidders, but the *Golden* sold at fair prices. The *Pigeons*, with the exception of the *Carriers* of Mr. Mountain, which were good, may be described as a very poor collection, and, being sent in anonymously "from amateurs," were not to be depended on as to being pairs.

There were some very good-faced *Spanish Chickens* from Mr. Gelderd, and some exceedingly good *Dorkings* from the same gentleman. An old cock, "winner of twenty prizes," sold for £1 4s., but he had seen his best days. Several of the other *Dorkings* fetched £1 6s. and £1 8s. each.

As is usually the case, good birds realised fair prices, but inferior specimens hardly paid expenses. For example, there were some *Silver-pencilled* cocks with *single combs* and *brown wings*. Those that were sold produced 3s. each, which would, after deducting commission and carriage, leave but a very small return to the sender. We cannot too often caution our readers that it is worse than useless to send such rubbish to the sale-room.

BRIGG AND LINDSEY POULTRY SOCIETY.

(From a Correspondent.)

THE third Annual Exhibition of this Society was held in the Corn Exchange, Brigg, Lincolnshire, on Tuesday, December 23rd. The entries were more numerous than last year, being in number about 250, and the stock exhibited also showed a great improvement on last year's birds, many exhibitors from Yorkshire and Nottinghamshire, as well as remote parts of Lincolnshire, having sent their birds, the prizes being, in most instances, of fair amount; but we would press upon the Committee the desirableness of an increase of classes for some varieties; for instance, *Cochins*, *Polands*, and *Bantams* had one class each; whilst *Dorkings* were fairly divided into *Coloured* and *White*, and the *Game* fowls and *Hamburgs* were also well divided.

The *Coloured Dorkings* were really a magnificent class, there being scarcely an indifferent bird in the whole. The winners were really first rate in every point, and shown in capital condition. *White Dorkings* were not first rate. There were one or two pens of good *Spanish*, but the majority of the class were not good. There were a few pens of

Cochins, which reminded us of the old times of these really useful and handsome fowls. The *Game* classes were excellent; indeed, the Black-breasted Reds were, most of them, first-class birds, and, we think, merited as much praise as the Coloured Dorkings. The *Polands* were also first rate, and the whole class was commended by the Judge. There were some good birds in both classes of *Hamburgs*, but the Pencilled were the best. The winning *Bantams* were splendid little birds; one pullet we noticed had even got the laced tail, which is a very difficult point to attain. There was another pen shown by the same exhibitor which was not noticed in any way, although we thought them quite as good as the first and second prize birds. In the extra class there were a pen or two of nice *Malays*. The single bird classes were all well filled with, for the most part, excellent fowls. *Turkeys* were also fine birds, the first-prize ones especially. The class of *Geese* was commended. *Ducks* were well represented.

George Jackson, Esq., of York, officiated as Judge, and gave general satisfaction by his awards.

COLOURED DORKINGS.—First and Second, Pelham W. Barnard, Esq., Bigby. Third, Mr. T. Marris, Ulceby Chase. Highly Commended.—Mr. J. Read, Market Raisin. Commended.—Mr. T. Marris, and H. Grantham, Esq., Sturton.

WHITE DORKINGS.—First, Mr. J. Turner, Ulceby. Second, Mr. J. King, Redbourne. Commended.—Rev. J. T. H. Tooke, Scawby Vicarage.

SPANISH.—First, Mr. S. Sneaps, Collingham. Second, Mr. J. Read, Market Raisin. Third, Lord Worsley, Brocklesby Park.

COCHIN-CHINA.—First, Mr. J. H. Barker, Hovingham. (Buff.) Second, Mr. J. Mell, Hessle, Yorkshire. (Buff.) Third, Mr. D. B. Turner, Hull. (Brown.) Extra prize, Mr. V. Wilkinson, Southwell, Notts. (White.)

GAME (Black-breasted Red).—First, Mr. J. Wright, Wheatley. Second, Mr. G. Robson, Hull. Third, Mr. D. Pickering, Hull. Extra prize, Mr. J. Turner, Ulceby.

GAME (any other variety).—First and Second, Mr. J. Wright, Wheatley. Third, Mr. P. Burniston, Brigg.

POLANDS.—First, E. H. Barnard, Esq., Bigby. (White-crested Black.) Second, Master G. Horner, Hull. (Golden.) Third, Mr. G. Winter, Hull. (Silver.) Highly Commended.—E. H. Barnard, Esq. (White-crested Black.) Commended.—Mr. S. Holloway, Hull. (White-crested Black.) Mr. G. W. Boothby, Louth. (Golden and White.) Miss Doughty, Faldingworth. (Golden.)

HAMBURGS (Pencilled).—First, Mr. W. Kimes, Bigby. (Silver.) Second, Rev. H. Swale, Brigg. (Gold.) Highly Commended.—J. Smith, Esq., Caistor. (Silver.) Commended.—Mr. F. Sutton, Brigg. (Silver.)

HAMBURGS (Spangled).—First, Mr. T. Simpson, Hull. (Gold.) Second, Miss Doughty, Faldingworth. (Silver.)

BANTAMS.—First and Second, Mr. G. W. Boothby, Louth. (Gold-laced.) Third, Mr. G. Robson, Hull. (Silver-spangled.) Highly Commended.—J. Smith, Esq., Caistor. (Silver-laced.)

ANY OTHER BREED.—First, Mr. G. W. Boothby, Louth. (Malays.) Second, Mr. H. Nicholson, Broughton. (Cross-bred.)

TURKEYS.—First, Mr. C. Nicholson, Staniwells. Second, Miss Slater, Carlton. Third, Mr. J. Day, Elsham. Highly Commended.—Mrs. Clarke, Hibaldstowe.

GESE.—First, Miss Slater. Second, Mrs. Clarke. Third, Mr. C. Nicholson. (The whole class commended.)

DUCKS (Aylesbury).—First, T. M. Keyworth, Esq., Lincoln. Second, Mr. W. Hall, Brigg. Extra prize, Rev. H. Swale, Brigg.

DUCKS (Rouen).—First, W. Skipworth, Esq., Kelsey. Second, Mr. T. Marris, Ulceby Chase. Highly Commended.—Mr. J. H. Barker, Hovingham.

DUCKS (any other variety).—First, Mr. H. G. Skipworth, Rothwell. Second, W. Skipworth, Esq., South Kelsey.

EXTRA STOCK.—Equal Prizes.—Mr. J. Nainby, Brigg. (Serai Taoos.) Mr. T. Turner, Ulceby. (Six Game Pullets.) Mr. W. Nicholson, Brigg. (Six Game Pullets.) Mr. T. Marris, Ulceby. (Six Dorking Cocks.)

DORKING COCK.—P. W. Barnard, Esq., Bigby. Commended.—P. W. Barnard, Esq., and Mrs. Grantham, Sturton.

COCHIN COCK.—Mr. J. Mell, Hessle. Commended.—Mr. C. Nicholson, Staniwells.

GAME COCK.—Mr. E. Waddingham, Brigg. Highly Commended.—Mr. J. Turner, Ulceby. Commended.—Mr. R. Cressey, Brigg, and Mr. T. Marris.

COCK OF ANY OTHER BREED.—Mr. H. G. Skipworth, Rothwell. (Manks or Rumpless Cock.) Highly Commended.—Mr. G. Winter, Hull. (Gold Poland.)

DORKING HEN.—Mr. T. Kirby, Barnetby. Commended.—P. W. Barnard, Esq., Bigby.

COCHIN HEN.—Mr. J. H. Barker, Hovingham. Commended.—Mr. W. S. Owston, Barf.

GAME HEN.—Mr. W. S. Owston, Barf. Commended.—Mr. G. Robson, Hull.

HEN OF ANY OTHER BREED.—Mr. G. W. Boothby, Louth. (Gold Poland.) Commended.—Mr. H. G. Skipworth, Rothwell. (Manks or Rumpless.)

THE NOTTINGHAM CENTRAL POULTRY ASSOCIATION.

THE arrangements for the first Exhibition of this Association, which promises soon to attain a position scarcely inferior to any other of a similar description, are proceeding very satisfactorily. The numerous poultry fanciers not only in the neighbourhood, but in other parts of the kingdom, have lent their active assistance to the undertaking, and by the vigorous exertions of the friends of the Society, and of its indefatigable Secretary, Mr. F. Bottom, the breeders have been prevailed upon to forward their birds in great numbers for competition at the approaching opening Show. The birds, generally speaking, we understand are of a very superior character, both as respects the beauty and the quality of the birds to be exhibited by the various competitors for the prizes. The entries are now complete, and when considered as a whole, they afford good grounds for its friends to congratulate themselves on the success of their efforts in thus bringing an association of so recent a birth into such prominence, and in concentrating upon it so large an amount of attention from the most celebrated patrons of Poultry Exhibitions in the country. The entries comprise 447 pens of Poultry, 238 pens of Pigeons, 180 cages of Canaries, about 30 Rabbits, and four Roots. The last-named branch of the Show will not make so considerable a figure as was anticipated; but still, taken as a whole, the first Exhibition of the Nottingham Central Poultry Association will appear to great advantage when compared with the commencement of other societies of a similar nature.—*Nottingham Journal*.

THE PRIZE FAIR AT STOCKPORT.

THE second Prize Exhibition for horses, horned cattle, pigs, sheep, rabbits, poultry, canaries, and vegetables, was held January 1st, in the Market Place, the same having been fixed by the Council, approved by the Home Secretary, and legalised by the Court of Quarter Sessions for the county.

The Judges for Poultry and Rabbits were—Mr. Samuel Harrop, Manchester, and Mr. Heywood, Bow Lee, near Manchester. Referee—Mr. Bowlas, Redditch. Pigeons—Mr. Dakin, Edgeley; Mr. Thomas Fosbrooke, Stockport; and Mr. Walker, Bow Lee, near Manchester.

SPANISH (old birds).—Joseph Newton, Portwood. *Young.*—First, Samuel Brown, Macclesfield. Second, Robert Cheetham, Stockport.

DORKINGS.—George Potter, Manchester. *Young.*—First, John Parsons, Manchester. Second, Geo. Potter.

COCHIN-CHINA.—Horatio Harrop, Audenshaw. *Young.*—First, W. Sanderson, Manchester. Second, John Parsons.

GAME FOWLS.—John Lawton, Staleybridge. *Young.*—First, John Crowther, Lower Broughton. Second, Herbert Steele, Stoke.

GOLDEN-PENCILLED HAMBURGS.—John Tetlow, Ashton. *Young.*—First, Jonathan Booth, Failsworth. Second, John Andrew, Ashton, with a certificate of merit for another pen.

SILVER-PENCILLED HAMBURGS.—Jonathan Booth, Failsworth. *Young.*—First, Jeffrey Ashcroft, Ashton. Second, David Potter, Manchester. Jeffrey Ashcroft, a certificate for another pen.

GOLDEN-SPANGLED HAMBURGS.—Nathan Marlor.

SILVER-SPANGLED HAMBURGS.—First, Jeffrey Ashcroft, both for old and young. Second, John Mercer, Daw Bank.

POLANDS.—Edward Hazlewood, Bridgnorth. *Young.*—First, David Potter, Manchester. Second, Edward Harrison, Denton.

BANTAMS (both old and young).—First, Wm. Hague, Haughton Green. Second, George Potter.

CROSS BREEDS.—Jonathan Hope, Failsworth. Joseph Sharpe, Stockport, extra stock, ticket of merit.

GESE.—First, C. R. Brady, Cale Green. Second, Thomas Robinson, Levenshulme.

DUCKS (Aylesbury).—First, William Richardson, Cheadle Hulme. Second, George Potter, Fallowfield.

DUCKS (Rouen).—John Hart, Carr Green. (Mixed Breed.)

DUCKS (Muscovy).—First, John Cheetham, Bramall. Second, E. W. Hazledine, Bridgnorth.

PIGEONS.—Carriers.—First, C. R. Titterton, Birmingham. Second,

John Percival, Birmingham. *Owls*.—First, Lee Clarkson, Stockport. Second, Henry Child, jun., Birmingham. *Almonds*.—First, C. R. Titterton. Second, John Percival. *Bald Pates*.—First, John W. Edge, Birmingham. Second, Henry Child, jun. *Beards*.—First, Henry Child, jun. Second, J. W. Edge. *Mottled Tumblers*.—First, John Percival. Second, Henry Siddeley, Manchester. (Short Heads.) *Fan-tails*.—First, J. W. Edge. Second, C. R. Brady. (The pair intended for the Show escaped on their way to the Market House.) *Jacobins*.—First, Henry Child, jun. Second, C. R. Titterton. *Trumpeters*.—First, H. Child, jun. Second, C. R. Titterton. *Cross Breed*.—First, John Schofield, Denton. Second, Wm. Hague, Haughton Green.

RABBITS.—*Black Spanish*.—Herbert W. Steele, Stoke-on-Trent. *Grey Spanish*.—George Hankinson, Shaw Heath. *Mixed Breed*.—First, Henry Child, jun. Second, Wm. Lomas, Bridge-street, Stockport.

CRYSTAL PALACE POULTRY EXHIBITION.

THIS most excellent Show began on the 10th, and will conclude on the 14th instant. The following is the award of prizes:—

SPANISH.—First and Second, Mr. H. D. Davies. Third, Mr. George Botham. Fourth, Mr. H. F. Wells. Highly Commended.—Mr. Charles Jones. Commended.—Mr. A. G. Brooke. Mr. John Buncombe. Mr. William Taylor. *Chickens*.—First, Miss M. L. Rake. Second, Mr. H. D. Davies. Third, Mr. Thomas Longhurst. Fourth, Mr. E. Page. Highly Commended.—Mr. C. Jones. Mr. J. R. Rodbard. Commended.—Mrs. J. Dain. Mr. G. W. Locke. Mr. J. R. Rodbard. Mr. E. H. Strange. (An unusually good class.) *Single Cock*.—First, Master McGregor Rake. Second, Mr. H. D. Davies. Third, Mr. E. Wenn. Highly Commended.—Miss G. Botham. Commended.—Rev. Clement Gilbert. Mr. J. R. Rodbard. Mr. Robert Wright. (A good class.)

DORKINGS (Coloured).—First and Second, Mr. George Botham. Third, Mr. R. Loder. Fourth, Rev. S. Donne. Highly Commended.—Lady Eleanor Cathcart. Rev. James Boyes. Mr. R. Loder. Mr. A. Popham. Commended.—Mr. C. Revett. Captain W. T. Squire. *Chickens*.—First, Mr. C. H. Wakefield. Second, Rev. Stephen Donne. Third, Rev. James Boyes. Fourth, Lady Eleanor Cathcart. Highly Commended.—Right Hon. Lady Dacre. Rev. James Boyes. Mr. J. Frost. Miss Florence Cathcart. Mr. R. Loder. Mr. C. Smith. Commended.—Lady Margaret Macdonald. Lord Robett Grosvenor. (A good class.)

DORKINGS (White).—First, Mr. N. Antill. Second, Mr. H. Allsopp. Highly Commended.—Mr. H. Lingwood. *Chickens*.—First, Mrs. H. Fookes. Second, Mr. H. Lingwood. Highly Commended.—Mr. H. Allsopp. Mr. G. Horne. Mr. J. Wood.

DORKING COCKS (Coloured and White).—First, Mr. W. F. Hobbs. Second, Mrs. Green. Highly Commended.—Rev. James Boyes. Mr. W. F. Hobbs. Mr. Stephen Lewry. Mr. William Simonds.

COCHIN-CHINA (Cinnamon and Buff).—First, Mr. J. Allison. Second, Mr. Thomas Sturgeon. Third, Rev. G. F. Hodson. Highly Commended.—Mr. N. Antill. Commended.—Mr. H. James. Mr. H. Marshall. Mr. H. Tomlinson. *Chickens*.—First, Mr. Charles Punchard. Second, Rev. T. H. Roper. Third, Mr. G. C. Peters.

COCHIN-CHINA (Brown and Partridge).—First, Rev. G. F. Hodson. Second, Mr. G. C. Adkins. Third, Mr. B. Ford. *Chickens*.—First, Rev. G. F. Hodson. Second, Master Snell. Third, Mr. B. Ford.

COCHIN-CHINA (White).—First, Mr. A. Peters. Second, Mr. F. May. Highly Commended.—Mr. A. Antill. Commended.—Mrs. E. Herbert. *Chickens*.—First, Mr. G. Lamb. Second, Mr. H. Loe. Highly Commended.—Mrs. J. Moorson. Commended.—Mr. R. Teebay.

COCHIN-CHINA COCKS (Coloured and White).—First, Mr. J. Crane, Jun. Second, Mr. W. Lamb.

BRAHMA POOTRA.—First, Mr. R. H. Bush. Second, Mr. J. Allison. Highly Commended.—Mr. G. Botham. Commended.—Mr. W. G. K. Breavington. *Chickens*.—First, Mr. G. Botham. Second, Mr. J. F. Chater. Highly Commended.—Mr. G. Botham. *Single Cock*.—First, Mr. C. Dain. Second, Mr. R. Teebay. Highly Commended.—Mr. G. Botham. Miss E. Breavington.

GAME (White and Piles).—First, Mr. S. Matthew. Second, Mr. S. Ridley. Third, Mr. J. Monsey. Highly Commended.—Mr. J. T. Wilson. Commended.—Mr. F. Sabin. *Chickens*.—First, Mr. J. Hartley. Second, Rev. T. E. Abraham. Third, Mr. S. Matthew. Highly Commended.—Mr. T. H. D. Bayley. Mr. F. Sabin. Commended.—Mr. J. Cooke.

GAME (Black-breasted and other Reds).—First, Mr. H. E. Porter. Second, Mr. C. R. Titterton. Third, Mr. N. Dyer. Highly Commended.—Mr. E. Lowe. Mr. S. Mathew. Mr. J. Monsey. Mr. H. Shield. Commended.—Mr. W. Bagg. Mr. W. Dawson. Mr. E. H. France. Mr. E. James. Mr. E. Lowe. (An unusually good class.) *Chickens*.—First, Mr. W. Cox. Second, Mr. S. Matthew. Third, Mr. C. R. Titterton. Highly Commended.—Mr. E. H. Strange. Mr. G. H. Smith. Commended.—Mr. W. Buncombe. Mr. W. Holt. Mr. W. Manfield. Mr. E. H. Strange.

GAME (Blacks and Brassy-winged, except Greys).—First, Mr. C. R. Titterton. Second, Mr. J. Worsey. Third, Mr. J. Monsey. Highly Commended.—Messrs. Field and Ballard. Commended.—Mr. W. Dawson. (A very good class.) *Chickens*.—First, Rev. T. E. Abraham. Second, Dr. J. R. Rogers. Third, Mr. J. T. Wilson. Highly Commended.—Dr. J. R. Rogers.

GAME (Duckwings and other Greys and Blues).—First, Mr. J. T. Wilson. Second, Mr. J. Monsey. Third, Mr. J. R. Rodbard. Highly Commended.—Mr. G. Lingard. Commended.—Mr. T. H. D. Bayley. Mr. H. Churchill. Mr. S. Matthew. (A good class.) *Chickens*.—First, Mr. W. Buncombe. Second, Mr. T. W. Pearse. Third, Mr. E. Lowe.

Highly Commended.—Mr. H. Churchill. Mr. S. Matthew. Mr. J. R. Rodbard. Commended.—Mr. W. Manfield.

GAME COCKS.—First, Mr. R. R. Sewell. Second, Baron Rothschild. Highly Commended.—Mr. R. Swift. Mr. H. Shield.

GOLD-PENCILLED HAMBURGS.—First, Mr. J. Howard. Second, Rev. J. A. Briggs. Third, Mr. W. C. Worrall. Highly Commended.—Mr. J. B. Chune. *Chickens*.—First, Mr. R. R. Clayton. Second, Mr. G. Botham. Third, Mr. W. Tyler.

SILVER-PENCILLED HAMBURGS.—First, Mr. E. Archer. Second, Mrs. T. H. Roper. Third, Mr. W. Bennett. *Chickens*.—First, Mr. G. Botham. Second, Mr. J. Martin. Third, Mrs. Green. Highly Commended.—Mr. W. Bennett. Commended.—Mr. J. Ashcroft. Mr. G. R. Gilbert.

GOLD-SPANGLED HAMBURGS.—First, Mr. M. H. Broadhead. Second, Mr. J. Conyers. Third, Mr. J. Andrew. Highly Commended.—Mr. W. Ludlam. *Chickens*.—First, Mr. W. Hugo. Second, Mr. J. Conyers. Third, Mr. J. Hartley. Highly Commended.—Rev. C. J. Down. Mr. J. Ashcroft. Mr. J. Crane. Commended.—Mr. W. Sanday. Mr. W. H. Swann.

SILVER-SPANGLED HAMBURGS.—First, Mr. W. Ludlam. Second, Mr. J. B. Chune. Third, Mr. W. Joshua. Highly Commended.—Master W. Kindred. Commended.—Mr. G. Botham. *Chickens*.—First, Mrs. H. Sharp. Second, Mr. R. Teebay. Third, Mr. G. Botham. Commended.—Mr. T. K. Bartrum.

HAMBURGH COCKS.—First, Mr. G. C. Adkins. Second, Rev. T. L. Fellowes. Highly Commended.—Mr. W. Sanday.

POLISH (Black, with White Crests).—First, Mr. T. Battye. Second, Mr. T. P. Edward. Third, Mr. G. C. Adkins. *Chickens*.—First, Mr. T. Battye. Second, Mr. G. S. Fox. Third, Mr. T. P. Edward. Highly Commended.—Mr. G. Ray.

GOLDEN POLAND.—First, Mr. E. H. Strange. Second, Mr. R. H. Bush. Third, Mr. J. Conyers. (A good class.) *Chickens*.—First, Mr. C. E. Coleridge. Second and Third, Mr. R. H. Bush.

SILVER POLANDS.—First, Mr. W. Tweed. Second, Mr. C. E. Coleridge. Third, Mr. G. C. Adkins. *Chickens*.—First and Second, Mr. C. E. Coleridge. Third, Mr. G. C. Adkins. Highly Commended.—Mr. J. Whittington. Commended.—Mr. J. Crane.

POLISH COCKS.—First, Mr. G. C. Adkins. Second, Mr. J. Crane. Highly Commended.—Mr. C. E. Coleridge.

MALAY.—First, Mr. J. Leighton. Second, Mr. J. Worsey. Highly Commended.—Mr. W. Manfield. *Chickens*.—Mr. S. Saunders. Second, Mr. J. Rumsey. Highly Commended.—Mr. S. C. Baker. Mr. C. Ballance. Mr. J. Buncombe. Mr. J. Leighton. Mr. J. Rumsey. (One of the best classes yet seen.)

ANY OTHER DISTINCT BREED.—First, Mr. C. E. Coleridge. (White Polish.) Second, Mr. W. Dawson. (Sultans.) Highly Commended.—Mr. R. Boys. (Crève Cœur.) Mr. H. Churchill. (China Silks.) Mr. P. Jones. (Calcutta Fowl.) Commended.—Mr. H. Churchill. (Yellow Polish.) Mr. J. R. Rumsey. (Andalusian.) Mr. C. Cole. (Andalusian.) Mr. W. Grave. (China Silk.) Mr. T. Bridges. (China Silk.)

BANTAMS (Gold-laced).—First, Miss S. Bridges. Second, Mr. U. Spary. Highly Commended.—Mr. G. C. Adkins. Miss Bridges. Commended.—Rev. G. S. Hodson. Mr. M. Leno.

BANTAMS (Silver-laced).—First, Mr. U. Spary. Second, Captain A. Burgess. Commended.—Mr. H. E. Porter.

BANTAMS (White).—First, Mr. J. Monsey. Second, Rev. G. F. Hodson. Highly Commended.—Mr. H. Wildman.

BANTAMS (Black).—First, Rev. G. F. Hodson. Second, Mr. F. G. Dutton. Highly Commended.—Mr. J. Conyers. Mr. W. H. Holmes. Mr. T. P. Mew. Mr. S. Ridley.

BANTAMS (any other variety).—First, Mr. W. S. Forrest. (Duck-winged Game.) Second, Mr. W. S. Forrest. (Black-breasted Red Game.) Highly Commended.—Mr. T. J. Cottell. (Game.) Mr. W. S. Forrest. (Black-breasted Red Game.) Miss Pulleine. (Blue Dun.) Mr. E. Stansfield. (Duck-winged Game.) Commended.—Miss E. Watts. (Calcutta Jungle.) Mr. W. Harrison. (Calcutta Jungle.)

GESE (White).—First, Mr. W. G. K. Breavington. Second, Mr. W. Manfield. Third, Mr. T. P. Edwards.

GESE (Grey and Mottled).—First, Mr. H. D. Davies. Second, Mr. F. Edwards. Third, Mrs. H. Hill. Commended.—Mr. W. Brown. Mrs. H. Fookes. Mr. E. J. Lumsden.

DUCKS (White Aylesbury).—First, Mr. B. Ford. Second, Mr. J. Weston. Third, Mr. J. F. Mortimer. Highly Commended.—Mr. J. Conyers. Mrs. H. Fookes. Mr. J. Briggs. Miss Shaw. Commended.—Mr. W. Joshua. Mr. T. M. Keyworth. Miss Shaw. (An excellent class.)

DUCKS (Rouen).—First, Mr. W. G. K. Breavington. Second, Mr. T. W. Pearse. Third, Mr. J. R. Rodbard. Highly Commended.—Mr. J. R. Rodbard. Captain T. W. Squire. Commended.—Mr. J. Beasley. Mr. W. G. K. Breavington. Mr. J. Crane. Mr. J. Weston. (A very good class.)

DUCKS (any other variety).—First, Rev. F. B. Pryor. (Black East Indian.) Second, Mr. J. Crane. (Call Ducks.) Third, the Hon. Miss Dillon. (Buenos Ayres.) Highly Commended.—Miss F. Cathcart. (Buenos Ayres.) Mr. J. Choyce. (Buenos Ayres.) Mr. F. Edwards. (Wild.) Captain W. T. Squire. (Wild.) Mr. J. Suart. (Essex Improved.) Commended.—Mr. J. Beasley. (Buenos Ayres.) Mr. John Marshall. (Buenos Ayres.) (A very good class.)

TURKEYS.—First, Mr. J. Fairlie. Second, Rev. T. L. Fellowes. Third, Mr. C. Edwards. *Poultis*.—First, Rev. T. L. Fellowes. Second and Third, Mr. J. Fairlie. Highly Commended.—Mr. W. J. Gowers. Commended.—Mr. Hill. (A very good class.)

GUINEA FOWLS.—Frize, Mr. J. Beasley.

PIGEONS.

POUTERS.—*Black Hens.*—Disqualified for colour. *Yellow Cocks.*—Prize, Mr. S. Summerhayes. *Yellow Hens.*—Prize, Master Godfrey J. Horner. *Blue Hens.*—Prize, Mr. S. Summerhayes. *Red Cocks.*—Prize, Mr. W. C. Burningham. Highly Commended.—Mr. Thomas Twose. *Red Hens.*—Prize, Mr. Thomas Twose. *White Cocks.*—Prize, Mr. Thomas Bridges.

CARRIERS.—*Black Cocks.*—Prize, Mr. G. C. Adkins. Highly Commended.—Mr. W. T. Square. Commended.—Mr. W. F. Cross. *Black Hens.*—Prize, Mr. W. F. Cross. *Dun Cocks.*—Prize, Mr. W. F. Cross. *Dun Hens.*—Prize, Mr. Jones Percival. Commended.—Mr. W. F. Cross. Mr. E. Russell. Disqualified.—Mr. W. T. Square. *Blue Cocks.*—Prize, Mr. W. T. Square. *White Cocks.*—Prize, Mr. S. Summerhayes. Commended.—Rev. F. Watson. *White Hens.*—Prize, Mr. S. Summerhayes. Commended.—Mr. E. Russell.

DRAGONS.—*Black.*—Prize, Mr. F. A. Lavender. *Blue.*—Mr. F. C. Esquilant. *Yellow.*—Prize, Mr. S. Summerhayes. *White.*—Prize, Mr. W. J. Woodhouse.

ALMOND TUMBLERS.—First, Mr. E. R. Maddeford. Second, Mr. F. C. Esquilant. Third, Mr. G. C. Adkins.

SHORT-FACED MOTTLES.—*Black.*—Prize withheld. *Yellow.*—Prize withheld.

SHORT-FACED BALDS.—*Black.*—Prize, Mr. Harrison Weir. *Blue.*—Prize, Mr. G. C. Adkins. *Yellow.*—Prize, Mr. Harrison Weir. Commended.—Mr. E. R. Maddeford.

SHORT-FACED BEARDS.—*Blue.*—Prize, Mr. J. Thomas. (A good class.) *Silver.*—Prize, Mr. F. C. Esquilant.

SHORT-FACED TUMBLERS.—*Black.*—Prize, Mr. Steib. *Black.*—Mr. J. Truss. (Disqualified, not belonging to the class.) *Black.*—Mr. J. Choyce, jun. (Disqualified, not belonging to the class.) *Blue.*—Prize, Mr. F. C. Esquilant. *Red.*—Prize, Mr. Jones Percival. *Yellow.*—Prize, Mr. F. C. Esquilant. (Very good.)

JACOBS.—*Black.*—Prize, Mr. Harrison Weir. *Red.*—Prize, Mr. E. Russell. *Yellow.*—Prize, Mr. E. R. Maddeford. Highly Commended.—Mr. Harrison Weir.

OWLS.—*Blue.*—Prize, Mr. J. Thomas. Rev. F. Watson. (Disqualified, marked on the leg.) Mr. C. Bluett. (Disqualified, entered in wrong class.) *Silver.*—Prize, Mr. E. R. Maddeford. *White.*—Prize, Mr. F. Thirkell. *Yellow.*—Prize, Mr. Jones Percival. (A good class.)

NUNS.—Prize, Mr. G. C. Adkins.

TURBITS.—*Black.*—Prize, Mr. Harrison Weir. *Red.*—Prize, Mr. Harrison Weir. *Yellow.*—Prize, Mr. G. C. Adkins.

FANTAILS.—*Blacks.*—Prize, Mr. G. C. Adkins. *Blue.*—Prize, Mr. F. A. Lavender. *White.*—Prize, Mr. Harrison Weir. Highly Commended.—Mr. S. Summerhayes.

BARBS.—*Black.*—Prize, Mr. G. C. Adkins. (Very superior birds.) *Red.*—Prize, Mr. Jones Percival. *White.*—Prize, Rev. F. Watson. *Yellow.*—Prize, Mr. E. R. Maddeford. Commended.—Mr. Harrison Weir.

MAGPIES.—*Black.*—Prize, Mr. C. Bluett.

TRUMPETERS.—Mr. G. C. Adkins. (Disqualified—no Tail.)

SPANISH RUNTS.—Prize, Mr. G. C. Adkins.

LEGHORN RUNTS.—Prize, Mr. John Choyce, jun. Highly Commended.—Mr. Thomas Bridges.

NEW VARIETIES.—*Blue Turbit.*—Prize, Mrs. Pettat. *Moons.*—Prize, Mr. Graham Vivian. *Hyacinths.*—Highly Commended.—Mr. Graham Vivian. Mr. F. A. Lavender. *Archangels.*—Commended, Mr. G. Hopkins. (A very good and interesting class, and the Judges beg to state that they consider the show of Pigeons very superior in the majority of its classes.)

RABBITS.

LONGEST EARS.—First, Mr. William Brewer. Second, Mr. William Arthur.

BLACK AND WHITE.—First, Mr. G. Mills. Second, Mr. Charles Sellen.

YELLOW AND WHITE.—First, Mr. Thomas Pinchbeck. Second, Mr. Henry Dixon, jun.

TORTOISESHELL.—First, Mr. Charles Sellen. Second, Mr. James Stinton, jun.

BLUE AND WHITE.—First, Mr. Nathaniel Norman. Second, Mr. Alfred English.

GREY AND WHITE.—First, Mr. Charles Sellen. (Second Prize withheld.)

SELF COLOUR.—First, Mr. H. Child. Second, Mr. Charles Sellen.

FOR WEIGHT.—First, Mr. George Wells. Second, Mr. G. Greensill.

FOREIGN.—First, Mr. S. C. Baker. Second, Mr. M. Taylor.

Judges of Poultry—Messrs Andrews, Baily, and Hewitt. Judges of Pigeons—Messrs. Bellamy and Cottle. Judges of Rabbits—Messrs. Banks, Fox, and Housden.

OUR LETTER BOX.

ROUEN DRAKE'S NECK.—"Is it essentially necessary that the Rouen drake should have the white ring round his neck for competition?—AN OLD SUBSCRIBER."

[The Rouen drake should be the counterpart of a Mallard. The latter has the white ring, and the Rouen should therefore have it.]

AYLESBURY DUCKS.—"My young Aylesbury ducks are laying at present. Is it usual at this season? Would it be advisable to set their eggs in the beginning of this month? I have white and buff Cochins, Dorkings, and large brown hens. Eggs are very scarce and dear in this neighbourhood (near Sunderland, Durham). I am getting fifteen and sixteen a day from about thirty hens, most of them young. They are fed with boiled potatoes and sharps (bran ground small) in the morning, and wheat and greaves in the afternoon. I shall be sitting Cochins as soon as I have a clocker. In very severe weather the Cochins have a fire in their house; they lay much better than the others.—CHINCHILLA."

[It is the merit of Aylesbury ducks to lay early. All the ducklings eaten in London in April and May are from that breed, and Aylesbury takes between £30,000 and £40,000 every year for them alone. You must sit the eggs under a hen. Eggs have been very scarce everywhere for some time, and few hens have produced them without forcing. Yours are not an exception. Greaves form a stimulating food, and you are wearing out your fowls by their use. We are not advocates of any other warmth than that produced by good food. Let them have their boiled potatoes hot, and, instead of "sharps," give them meal. Discontinue the greaves. Sit your hen on seven eggs only in January. Be careful not to sit the first eggs of your young ducks.]

CUCKOO FOWLS (*James Mackintosh*).—There are Cuckoo varieties of many breeds—Dorkings, Cochins, &c. Rangons and Ghou Rooks are neither patronised by fanciers nor dealers. The "wonderful Indian cock" may be considered the male of the species Phoenix! We know nothing about the second edition of the "Poultry Book." We will insert the advertisement of your stock for 3s. 6d.

LONDON MARKETS.—JANUARY 12TH.

COVENT GARDEN.

Supply moderate, business dull. There has been a large consignment of *American Apples* sent to meet the demand of the market, but have arrived in bad condition, as may be noticed also of a parcel of *Bordeaux Reinettes* come to hand this week. *Asparagus, Sea-kale, and Rhubarb*, are well supplied and reach about last week's quotations. *Potatoes* are a heavy trade at all the depôts, and are quite 10s. less than at the commencement of the year, many of the samples being much diseased.

FRUIT.

Apples, dessert, per doz. 1s. to 3s.
Pears, per dozen 6s. ,, 10s.
Peaches, per doz. 0s. ,, 0s.
Nectarines, do. 0s. ,, 0s.
Pine-apples, per lb. 4s. ,, 6s.
Grapes, per lb. 6s. ,, 10s.
 Foreign, per lb. 2s. ,, 3s.
Melons, Foreign, each 2s. ,, 5s.
 English, do. 0s. ,, 0s.
Morello Cherries, per lb. 0s. ,, 0s.
Oranges, per 100 4s. ,, 10s.
 Tangerine, do. 10s. ,, 20s.
 Seville, do. 8s. ,, 14s.
Lemons 6s. ,, 12s.
Almonds, per lb. 2s. 6d. ,, 4s.
Nuts, Filberts, per lb. — ,, 1s.
 Cobs, ditto .. 1s. ,, 1s. 6d.
 Barcelona, per bushel 20s. to 24s.
Nuts, Brazil, ditto. 14s. ,, 16s.
Walnuts, per 1000 .. 10s. ,, 15s.
Chestnuts, per bushel 16s. ,, 24s.

VEGETABLES.

Cabbages, each 9d. to 1s. 6d.
 Red, each 3d. to 6d.
Cauliflowers, each 6d. ,, 1s.
Broccoli, per bdl. 1s. 3d. to 1s. 9d.
Greens, per doz. bnch. 2s. ,, 4s.
Spinach, per sieve .. — ,, 4s.
French Beans, per hd. 3s. ,, 4s.
Carrots, per bunch .. 5d. to 7d.
Parsnips, per doz. 9d. to 1s.
Beet, per doz. 1s. to 1s. 6d.

Potatoes, per cwt. .. 7s. to 10s.
Onions, Y'ng, per b'ch. 4d. ,, 6d.
 Old, per bushel 3s. ,, 4s.
Turnips, per bunch. 3d. ,, 4d.
Leeks, per bunch 2d. ,, 3d.
Garlic, per lb. 6d. ,, 8d.
Horseradish, per bundle 2s. ,, 4s.
Shallots, per lb. 6d. ,, 8d.
Lettuce, Cos, per score 1s. 6d. ,, 2s.
 Cabbage per doz. 9d. ,, 1s.
Endive, per score .. 1s. 6d. ,, 2s.
Celery, per bunch. 9d. to 1s. 6d.
Radishes, Turnip, per dozen bunches — ,, 4s.
Ditto, long, per hund. — ,, 6d.
Water Cresses, per doz. 9d. to 1s.
Small Salad, per punnet 2d. ,, 3d.
Artichokes, per lb. — ,, 2d.
Asparagus, per bdl. .. 7s. ,, 10s.
Sea-kale, per punnet 2s. 6d. ,, 4s.
Rhubarb, per bundle 6d. ,, 1s.
Cucumbers, each 2d. ,, 3d.
Mushrooms, per pot 1s. 6d. ,, 2s.

HERBS.

Basil, per bunch 4d. to 6d.
Marjoram, per bunch 4d. ,, 6d.
Fennel, per bunch .. 2d. ,, 3d.
Savory, per bunch .. 2d. ,, 3d.
Thyme, per bunch .. 2d. ,, 3d.
Parsley, per bunch .. 2d. ,, 3d.
Mint, per bunch 2d. ,, 4d.
Green Mint 6d. ,, 8d.


POULTRY.

There has been little poultry at market since Christmas, and prices have risen in proportion; but senders must not reckon upon its duration, as it is probably only temporary.

Cock Turkeys .. 12s. to 22s. each.
Hen do. 6s. to 11s. ,,
Large fowls .. 5s. 6d. to 6s. ,,
Smaller do. 4s. to 4s. 6d. ,,
Chickens 2s. 9d. to 3s. ,,
Geese 8s. to 9s. ,,
Pheasants .. 3s. 3d. to 3s. 6d. ,,
Partridges 2s. ,,
Hares 2s. 9d. to 3s. ,,

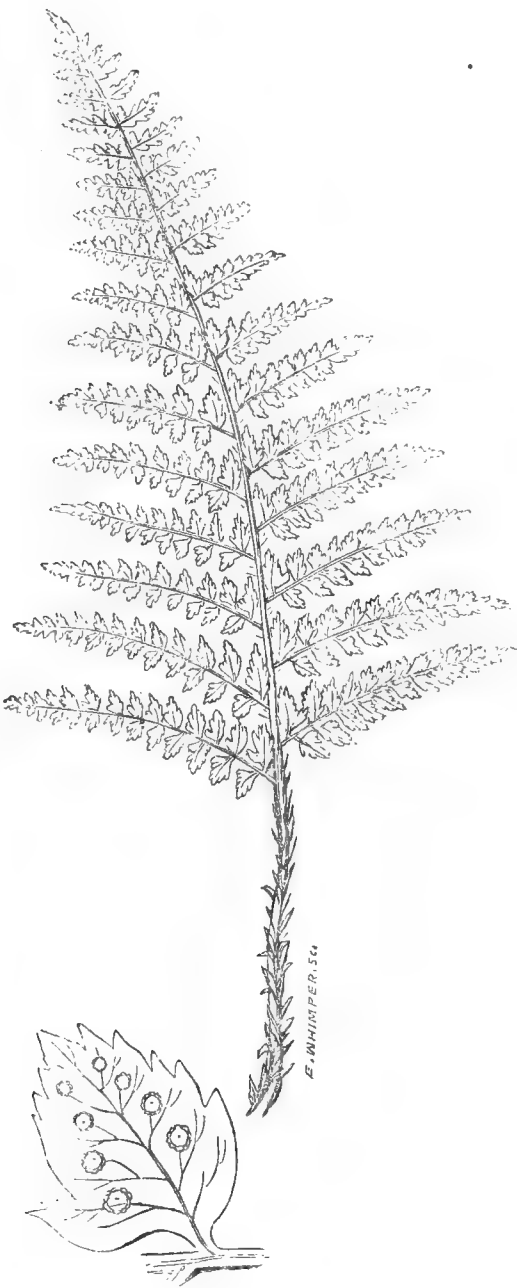
Wild Ducks 2s. each.
Teal 1s. 6d. to 1s. 9d. ,,
Woodcocks 3s. 3d. to 3s. 6d. ,,
Snipes 1s. 3d. to 1s. 6d. ,,
Plover 1s. ,,
Larks 1s. to 1s. 4d. per doz.
Pigeons 1s. to 1s. 2d. each.
Rabbits 1s. 4d. to 1s. 5d. ,,
Wild ditto 10d. to 1s. ,,

WEEKLY CALENDAR.

D M	D W	JANUARY 20—26, 1857.	WEATHER NEAR LONDON IN 1856.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
20	Tu	Groundsel (Senecio).	29.103—29.034	50—42	S.	06	57 a. 7	26 a. 4	3 14	24	11 24	20
21	W	White Archangel (Laum).	29.071—29.026	51—37	S.W.	36	56	28	4 29	25	11 41	21
22	Th		29.515—29.296	42—37	N.E.	14	55	30	5 41	26	11 57	22
23	F		29.344—29.220	54—45	S.W.	12	53	31	6 45	27	12 12	23
24	S		28.992—28.928	52—39	S.W.	13	52	33	7 36	28	12 27	24
25	SUN	3 SUNDAY AFTER EPIPH. CONV. [ST. PAUL.]	29.432—28.998	50—35	W.	—	51	35	sets		12 41	25
26	M		29.473—29.398	51—36	S.W.	14	49	36	5 a. 5	1	12 54	26

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 43.3°, and 32.4°, respectively. The greatest heat, 58°, occurred on the 23rd, in 1834; and the lowest cold, 7°, on the 20th, in 1838. During the period 110 days were fine, and on 86 rain fell.

POLYSTICHUM ANGULA'RE.



THIS is the *Aspidium aculeatum* of the botanist Kunze. Indeed, there is much disagreement among authorities as to the differences between *Polystichum aculeatum* and *P. angulare* and their varieties. As there are sufficient points of distinction we have avoided, by retaining them as separate species, any attempt to reconcile the dissentients. That now under our consideration is the *Aspidium angulare* of some botanists. In English it has been called *Angular-leaved Shield Fern*, *Soft Prickly Shield Fern*, and *Angular Prickly Shield Fern*.

Its main *root* is large, tufted, often upright and trunk-like when old. It sends forth many creeping side-shoots, which produce crowns, and the whole are furnished with many coarse, wiry rootlets. The *fronds*—spear-head shaped in general outline—vary in height from two to four, and even more, feet. They are more soft and delicate in their texture than those of *P. aculeatum*, consequently they are more flexible, drooping, and elegant in their habit of growth; they are also more shaggy. Of the *stem* about one-fourth is unleafleted, and is, as well as the stalks of the leaflets, very thickly covered with reddish-brown chaff-like scales. Towards the extreme ends of the leaflets the scales gradually are finer until they really become hairs. The *leaflets* are alternate and narrow spear-head in outline. The *leaflets* are alternate, flat, stalked, and would be pointed-egg-shaped if the upper side did not produce near its base an irregular-toothed lobe; all are saw-edged. The lowest leaflet on the upper edge of the leaflet's stalk, and next the stem of the frond, is larger than the other leaflets, though not so markedly larger or regular in its position up the stem as in *P. aculeatum*. All the lobes and teeth end in hairs, softer and less bristle-like than in *P. aculeatum*, and on their under surface are many hair-like scales. The mid-vein of each leaflet is straight, emitting side-veins in opposite pairs, and the side-veins are branched. On the lowest of the upper branches of these side-veins is the *fructification*. It is in circular masses, each having a cover (*indusium*), slightly depressed in the centre, and usually entire.

There are two varieties. *Subtripinnatum* (almost doubly-leafleted), with the lower leaflets very deeply cut, and the sections or lobes sometimes distinct. *Angustatum* (narrow-leafleted), all the leaflets being very narrow, and much more pointed than are those of the species.

It is found in similar situations as *P. aculeatum*, and is plentiful in England, Wales, and Ireland, but less abundant in Scotland. Wherever *aculeatum* occurs this species is likely to be found.

There is little doubt that this species was known to Ray in 1696, when he published the second edition of his *Synopsis Stirpium Britannicarum*. After particularising the Fern we have previously described as *Polystichum aculeatum*, Ray next mentions *Filix Lonchitidi affinis* (Fern related to Lonchitis), adding, "Under this title was sent to me, by Mr. Lloyd, a plant like to the preceding, but with rounder leaflets, and covered all over

with longer scales. He collected it in the mountain parts of Wales."

Mr. W. Reeve very correctly observes that *Polystichum angulare* will thrive remarkably well under the same course of treatment as was given for *P. aculeatum*; for like that it delights in a well-drained, shady situation, and in the same compost. It is a very desirable and a very hardy plant; yet, when cultivated in pots or situations where the roots are much exposed, a slight protection will be necessary during severe weather. It may be increased in the same manner as *aculeatum*.

THE Annual Meeting of THE GARDENERS' ROYAL BENEVOLENT INSTITUTION was held at 21, Regent Street, on Wednesday, the 14th inst.

The chair was occupied by Mr. John Lee. The Meeting was very numerously attended, both by members from the vicinity of the metropolis, and also from the country, and all seemed to manifest a lively interest in the welfare of this admirable Institution.

After the Secretary had read the Report, which was unanimously adopted, Mr. Wrench was re-elected Treasurer, Messrs. Charlwood, Lee, and Forsyth, Auditors, and Mr. E. R. Cutler, Secretary, for the ensuing year.

By the rules of the Society, six members of the Committee retire annually, and on this occasion Messrs. Atlee, Glendinning, Palmer, Forsyth, Taylor, and J. A. Henderson, gave place to Messrs. Eagles and Hutt, of Highgate; W. B. Smith, of Great George Street, Westminster; Woodroffe, of Harrow Road; Andrew Henderson, of Pine Apple Place; and Howe, of York Terrace, Regent's Park, who were elected unanimously.

The attention of the Meeting having been drawn to a letter signed by "An Old Subscriber," in the *Gardeners' Chronicle* of the 2nd of August last, reflecting upon the conduct of the Committee and Secretary, the Meeting unanimously resolved that the charges and allegations contained in that letter are entirely without foundation, and considerable indignation was expressed by many of the members present that publication should have been given to an anonymous communication, tending to peril the prosperity of an Institution, with which all who are connected have no other object than to carry out, conscientiously, the charitable purpose for which it was established.

The ballot was then proceeded with, when it was found that the election had fallen on

Mary Anne Farquharson, who polled 818 votes.

Ann Arnold " 570 "

Robert Hodge " 608 "

In consequence of the death of Henry Schneider, one of the pensioners, in December last, it was resolved by the general Meeting that the next highest on the poll should be added to the list of pensioners, and consequently John Davey, having polled 526, was added accordingly.

We cannot too strongly impress upon the attention of our readers the importance of this valuable institution, which has for its object the relief of those who, during

life, have followed the pursuit of gardening as a livelihood, and who, in the evening of their days, from various causes, are deprived of the necessities and comforts of life. There are few who know anything of gardening and gardeners who do not also know, that as a class, gardeners are very much underpaid, many receiving little more than the wages of a London carman, some not more than that of a day-labourer, and others not that of a butler or "man-cook;" and still they are expected to appear respectable, to bring up a family, and to keep them respectably. What, then, can a man under such circumstances save during his lifetime to serve as a solace to him in his declining years? We do hope the sympathies of some who read this notice will be excited, and that they will apply to Mr. Cutler, the Secretary, who will, we know, furnish every information on the subject.

THE CRYSTAL PALACE.—JANUARY 10TH.

THIS is written on "handsel" Monday; but I had my handsel on Saturday, the 10th instant, when I was tempted to go out thus early in the season to see the first Exhibition of poultry, pigeons, and rabbits, which "came off" most triumphantly. Poultry people, or some of them, may say that I only mean this in order to please, without knowing anything of the matter; but such is not the case. I keep poultry, and have been studying the new races these five years past. I have two of the best Cochins in the country. They are the very best of those bred by the Rev. E. Phillips, our worthy Incumbent of Surbiton, who is as good a judge of that breed as any one can be, and for being the next best judge of them hereabouts Mr. Phillips made me a present of that pair. Everybody ought to go to the "show" of any particular things he likes and studies, whether they be plants or bullocks, pigs or poultry, or caps and bonnets, and all the fashions. I often go on purpose through all London to see the bonnets, shawls, and dresses in St. Paul's Churchyard, just because I like to see such things. I used to go to Cattle Shows till they got the beasts so fat that they were beastly to look at, and so I am in a condition to repeat it, that nothing in the world is so good for learning about anything as to attend shows of it.

I had no idea that I could have learned so much about poultry at one show, and, to tell the truth, I did not know till then that there was so much to learn about them. I saw Mr. Stevens there, and he appeared to be as much pleased as I was, although he had not a quarter so much to learn.

The Exhibition was held in the south wing. The awful noise peculiar to a Poultry Show was not half so "stunning" as usual, owing to the great size and height of the place, and at a distance it was rather pleasant. The rabbits and pigeons were in the lower gallery of the front of the Palace, a long way off from the noisy show, but on the same level. The rabbits were almost all of the long-eared classes, and some of them were as big as hares. Black was the prevailing colour; but the most extraordinary thing which struck me was the scarcity of good cocks of the Cochins breed, or Shanghaes. There were only four really good cocks there, whilst the hens were almost uniformly first-rate. I do not know one of the Judges or exhibitors, so I cannot speak from favour or prejudice; but to let you see I know something of this breed, although I may not know the rules for judging them, I would disqualify the first prize pen altogether if they were plants, on account of one of the hens wanting feathers on that part of the body which

one does not like to name; but you know what I mean. The two hens in this pen were otherwise beautifully matched, light buff, and very large birds; but, like most of the hens there, and like my own hens, their necks, just behind the ear, were too thick for my ideal beauty of symmetry. The cock in the second prize pen was the best there for symmetry, and the colour was perfect, and the only cock there of that breed that was really perfect. What I call perfect colour is to have all the feathers on the back of exactly the same tint. Most of them had three shades of colour on the back, and some only two shades, that on the wings being the darkest; but I am so certain as to the value of colour that I shall never be a judge on florists' flowers or on poultry till they make colour the first point of importance. In flowers substance should be the next point, and before symmetry; but in fowls I would agree to let symmetry have the same value as colour; but, to show you how people differ on these things, I must mention one pen of Cochins, a cock and two hens, from a nobleman, who put £1000 valuation on them, and yet the three birds between them had not one single point of symmetry or colour to recommend them to a stranger; but they might be transition birds, that is, got from extraordinarily fine parents, and that the qualities of these parents were expected to shine forth in a higher degree in the second or third generation, and that the breeder might fear, if he lost this first generation, he should never be able to transmit the prized object through any other brood; and that is the only way in which I could account for £1000 being asked for three birds worth only about 30s. between them. I have some seedling Geraniums which you might not think worth the pots they are growing in, but £1000 might not replace them in my lifetime if I were to lose them; and without them I could never accomplish a certain object which I am aiming at. Hence their value in my eyes, and hence, too, the value of those birds which we may think to be merely nominal.

I now turn to a subject on which "my word is as good as my bond." They have knocked two tunnels through two hills on the way to and from the Crystal Palace across Clapham Common, where the "west end line" is to join it. Visitors to the Crystal Palace coming by the South Western Railway may now stop at "Clapham and Wandsworth" Station, cross the Common, and take the new line through the tunnels right into the Crystal Palace, and be landed on the same platform as the Londoners from the London Bridge Station. That is the way we went, which brought us first to the bottom of the grand colonnade. The index, or best index plant among soft-wooded plants, to tell how the 17° of frost affected the plants in this colonnade last month is the "Cherry-pie plant;" the *Heliotrope* and *Acacia lophantha* are as good trees as any others of the real woody plants for the same purpose. If these two are safe from the frost, all the rest which I named long ago must be more than safe; they must be comfortable, and so they all are. Some of the *Heliotropes* are in bloom-bud; and the *Acacia lophantha* is growing, as one may see by the young leaves on the top of the shoots. Three or four of the large climbers have suffered a little, however, from autumn drought at the roots, which a man in a green old age might think was caused by the frost, when the real cause was good management to check late growth in the autumn. All half-hardy climbers, and all Grape Vines which are to be forced before the middle of the following March, should not receive water at the roots from the middle of September except by hand, if it could be so managed; and when you have to deal with an extensive border like that in this colonnade, it is better that some of the plants which have their roots near the surface should be allowed to flag a little for want of water than that

the great bulk of the plants should not be set perfectly to rest in the autumn, be they Vines, or climbers, or scarlet Geraniums on Harry Moore's method. For the latter I prefer such a degree of dryness in October as will kill every one of the very small outside-of-the-wall roots; and in the spring the old roots would then produce fine sucking new roots for one old and useless root at the end of the season.

The *Cobæas* and *Maurandias* are as green as if it were summer; the *Lophospermums* just ready to be pruned; several plants of *Jasminum nudiflorum* are in full bloom; the *Daturas* look as if they ought to bloom very early, and before they are pruned for the season; the *Tropæolum Triomphe de Gand*, after running about all last season, is now in bloom-bud at every joint, and will be splendid in the spring; *Acacia grandis* makes a good wall or pillar plant in a conservatory. Here it is ten feet high already, and the young wood is loaded with bloom-buds. *Acacia affinis*, or Green Wattle Mimosa, is a splendid "climber," and may be used as such, or as they have it at the Stud House, Hampton Court, and be pruned every year in April, or early in May, as close as a White Currant bush, which is the right time to prune and the right way of pruning every one of the *Acacias*. Here it is nineteen feet high now, and is as much like a "herring bone" as any plant can be, the middle stem rising as straight as an arrow, and the side branches alternately are as regular as if they were set by the compass, those of them up about the middle height being the longest; thence they diminish both ways, the longest being about two feet or so, and twenty-two of them on each side. Compare this with any three-year-old plant of it in your part of the country. I once had a seedling of it eighteen feet high at the end of so many months. *Plumbago Capensis* is pinched by drought close by the side of a *Heliotrope*, which is as green as a Leek. *Fuchsia Actæon*, of which there are many, has cast all its leaves, and is in leaf-bud ready to open now, while *F. Dominiana* and *Don Giovanni* have the old leaves as fresh as ever. *Stauntonia latifolia* does not look half so well here as it did in the open quarters of Mr. Jackson's Nursery on Surbiton Hill. To have this splendid broad-leaved climber look well in-doors the air need be loaded with moisture; but we shall see how Mr. Veitch will do it in his front vestibule. *Camellia tricolor* is very nearly open, and all of them are loaded with flower-buds. While *Camellias* are young, and planted out in a bed or a border like this, they want as much water as the *Lapageria* all the time they are making their annual growth: all the finer kinds of *Rhododendrons* the same. The best school for this kind of watering that I know of is Bank Grove, near Kingston, the seat of W. Byam Martin, Esq., who learnt that system from Nature herself on the farthest ranges of Nepaul and Bhootan. *Veronica Andersonii* was in bloom. *Dolichos lignosus* is the most flourishing plant in the colonnade. *Cantua dependens* was cut down half way some time in the autumn, and the young wood is now a few inches long; but there was something the matter with it, else they would not have cut it down then, for it will never flower well if it is pruned in the autumn or winter. Directly after flowering in May or June is the time to prune it; then to prune it as close as the White Currant; after that to water it so as to get a rapid growth till the end of August; then to keep it on short commons the whole winter, and up to the time of showing flower-buds. There is a row of low hybrid *Rhododendrons* just planted along the whole length of the border for the climbers. These were removed from different parts of the garden with good balls, the balls were thoroughly watered, and the holes under them; but the holes were not "filled in" till all the superfluous water had time to drain off. These

plants will flower in April, being early kinds, and, as it were, slightly forced here. After flowering they will be removed, and a second lot to flower in May will succeed them.

In every part of the Palace the plants look well. The marble beds along the fountain basins are now as full of pot plants as they were last July, and most of them are of the same "furnishing" kinds, and the only difference is the want of flowers. Whole hosts of super-numerary plants of the same kinds, in small pots, meet you right and left along the whole length of the building in groups here and there, and every one of them looked as if they were in cold pits, and only six inches from the glass all this winter; and were it not for the look of the thing, and for the danger of being run over at times, I believe all the bedding plants for that garden might be kept as safely inside the Palace as in the best constructed pits in England, but I may be wrong: I could only judge from what was then before me. No doubt but on such grand occasions the gardeners put the best foot foremost. There were very few plants in flower; but all the plants were most healthy-looking, and very clean, except in the colonnade, where a good rattling with the water engine is much wanted, the leaves being in one coat of dust.

Woodfordia radicans, on the stumps at the west end, seems the best kind of Fern to cover such places, as it spreads so much without taking head room from other plants near it. Lots of *Witsenia corymbosa* were in bloom at that end, and it was droll to see the India-rubber plant, *Ficus Indicus* of old, the common Rhododendrons and Camellias, with Cryptomerias, *Cupressus funebris*, and *Calceolaria rugosa*, growing side by side, without any perceptible difference in their vigour, health, or growth. I question if there is a plant house in the three kingdoms where such plants could be grown with anything near so little difference.

Araucaria Bidwillii promises to be the finest of that class of plants, even competing with *imbricata* itself; but we have had scores of undeveloped plants in the nurseries for years, for want of proper knowledge of them, which knowledge will soon be supplied from this collection. *Corynocarpus laevigatus* was the best new plant of the kind in London when I first came up. It was then supposed to be a rival to the Magnolias; but who knows it now out of a botanical collection? I saw it here about the middle of the nave, and its healthy, shining aspect suggested a new idea to me, that of taking a season ticket, and spending one day a week for a whole season to get up a thorough review of all the "undeveloped" plants in the Crystal Palace. Who is destined to "get up" a taste for winter gardens, however? for without that taste no one would read my review after all.

A huge bush of *Sparmannia Africana* was in bloom. *Acacia argyrophylla*, seven feet high here, with grayish-white leaves and wood, would make an excellent subject in a collection of fine-leaved or silver-leaved plants; but I shall not anticipate the review any further to-day than a mere glance at the stove end, where the plants are in a still better condition than those we left behind. There is no question now about their being able to grow stove plants here to perfection if they choose to go on with them. The *Musas* have grown into groves already. One like *sapientum* was in bloom on one side of the bronze fountain, and *coccinea* was an object of great beauty in bloom on the other side. Here they had some *Echmæa fulgens* and little *Poinsettia pulcherrima* in bloom in the marble beds along the basins.

Hosts of young *Palms* are in excellent health. *Palms* will be "developed" here most certainly some day. Several large *Cocos plumosa* have made a good start already; also *Chamærops Martiana* and *excelsa*.

But the following will let gardeners know more correctly what I mean when I say they look particularly well just now:—The Star Apple, *Chrysophyllum Cainito*; the Avocado Pear, *Persea gratissima*; the Coffee tree, the Rose Apple, *Jambosa vulgaris*; the Cherimoyer, *Anona Cherimolia*; the Wampee tree, *Cookia punctata*; the Ordeal tree, *Cerbera Tanghin*; and the soft-leaved Malabar Nut tree, *Justicia Adhatoda*. All these look as healthy here as ever any of them did in a close stove; but it will be many years before the *Beaumontia grandiflora* will expand its growth so high up in the arched crystal vault as to throw it into free flowering in this stove heat. The glass stood at 65° that afternoon.

The grass and gravel, and all the trees and shrubs in the garden, looked as fresh as in summer. A pouring-in-torrents rain on the previous night did not "wash" the gravel more than washing off the dirt, nor rendered any part of the walks unfit for the roller. The large Deodars are now "feathered" as if they had been growing there for years. The beds along the bottom of the centre part of the terrace are planted with Wallflowers; and the Araucarias and best hybrid Rhododendrons all over the grounds are screened from the cold by "wattled hurdlework." Thus rough stakes or poles are set upright all round a tree or bed two feet apart, and as high as the plants to be screened; and faggot shoots of Oak, with the leaves on, are wattled in and out all round very neatly for such work. Round the American or Rhododendron beds the height of the wattling is that of common sheep hurdles, and a hedge of Oak branches in leaf, from two to three feet high, is made along the top of the hurdle-like fence by thrusting down the shoots in the top of the wattle or hurdlework just as you would stake a row of dwarf Peas. This method is the very best that has yet been tried for "breaking the wind" and sun in frosty weather. The sun, wind, and frost often run together, and brown over the best evergreens, and pinch blossom-buds with no more damage, and this is the antibrowning process. Beach, Hornbeam, and Larch boughs, with the dried leaves on, are as good as the Oak for this purpose.

There is another most useful application of the same process in some country places. You cannot plant out anything for underwood in an old plantation that will not be destroyed the first winter by hares and rabbits. I once planted out eleven thousand Yews and Hollies, and some Ash and Spanish Chestnut in an old plantation that swarmed with game, and never lost one of them. I allowed a yard in diameter, and from half a yard to two feet high of this kind of wattling, and none of the "varmints" ever got over it. D. BEATON.

WINTER MANAGEMENT OF A SMALL CONSERVATORY HEATED BY GAS.

So much has been said of these matters of late, that some excuse may be presented for not attending a month earlier to the particular case of "E. C.," of Barnsbury Park. He tells us that his conservatory, attached to the house, is twelve feet by six feet, glass above and in front, but brick sides, aspect north-east, with no sun in winter, heated by gas, with a pipe to take off the impure air, and a pan of water on the stove to yield moisture. During last winter he kept the temperature at 42°, and lost nothing; but, as the stock has increased, he wants more information as to the treatment, air, water, &c., that should be given until the 1st of April. A list of plants is given, and a farther list is required of what would answer in such circumstances, as the owner is much from home, and has no pits or frames.

I have read the letter with mingled feelings of pleasure and regret: pleasure that our correspondent should have

been able to manage so many things in his little house, because confident that before long he will be able to give a lesson to us and to others, whilst, in the meantime, the internal arrangement of his house, and the mode and expense of heating by a gas stove, would be interesting to many; and regret, because we fear that, instead of greatly increasing his collection, true policy would require that it should rather be diminished, or, at any rate, that the plants should consist more of those requiring similar treatment.

In such a small house some amateurs would prefer a few middle-sized plants; but I must own I should have a strong sympathy with "E. C." in endeavouring to have as much variety as possible, and, consequently, keeping the plants young and in small pots; and though by this means the labour and niceties of watering are considerably increased, yet, on the other hand, there is less danger of the plants getting into a sodden state from over watering.

The list of "E. C.'s" plants is so similar to that of others requiring similar information that I subjoin it, that the relevancy of the previous and following remarks may be more perceptible:—*Camellias*, *Azaleas*, *Kalmia latifolia*, *Chorozema Lawrenciana* and *ilicifolia*, *Pimelea decussata*, *Mahernia vesta*, *Torenia Asiatica*, *Eriostemon intermedium*, *Begonia parviflora*, *Gloxinias*, *Vernonia Hendersonii*, *Deutzia gracilis*, *Maurandias*, *Mahonia*, *Cyclamen*, *Oleander*, *Cytisus*, *Myrtles*, *Arum*, *Tropæolum tricolorum*, *Dielytra spectabilis*, *Daphne*, *Ceanothus*, *Heliotropium*, *Geraniums*, *Fuchsias*, *Lilium* of sorts, *Antirrhinum Hendersonii*, *Pentstemon crispum* (do not know it). Some of these are small plants in pots from cuttings of the previous summer, as *Mahernia*, *Chorozema*, *Geraniums*, *Fuchsias*, *Heliotropes*, and *Antirrhinum*, the parent plants also being in the house. The cuttings of *Mrs. Story* *Fuchsia* in cutting pots had better remain in them until March.

With such an aspect, and an average of 42° of temperature, few things will be in bloom in winter. The *Cytisus Attleana* will furnish a yellow. *Heliotropes* at the warmest end will furnish a sprig of lilac. The *Jasminum nudiflorum* will yield a profusion of yellow flowers; and the single *Wallflowers*, from a sowing in March and April, will also bloom pretty freely, and so would Tree Carnations that were strong plants early in autumn. The bulbs, such as *Van Thol* and *Rex Rubrorum* Tulips and Hyacinths, would only bloom in winter by being potted early, kept in a dark place until the pots were full of roots, and then placed near the kitchen fireplace at night, and in the window during the day, until the flowers began to open. Such plants as the *Jasmine*, Carnations, &c., should be set out of doors when done blooming.

The *Kalmia*, the *Mahernia*, and the *Ceanothus* do not require any protection in winter, except the roots to be kept from hard frost, and a branch or a bit of mat may also go against the branches of the latter. I have seen such plants, and also the *Laurestinus*, constituting ornaments to little greenhouses in winter and spring; but to keep them for such purposes the pots should be plunged out of doors in the spring, and be fairly supplied with water in summer. When in the house in winter in such circumstances, not being forced, they will require the coolest and airiest position. In such a house as that of "E. C." I should hardly deem them worthy of a place, unless merely for filling up and looking green at first.

The *Pimelea*, *Deutzia*, *Oleander*, *Myrtle*, *Antirrhinum*, *Pentstemon*, and *Fuchsia* are the next hardiest; in fact, the second is quite hardy in the climate of London, but in such a house will bloom early if kept in-doors after October. Old plants of *Fuchsias* will stand very well beneath the stage, or in any place free from frost, care being just taken that the soil is not wet, nor yet quite

dry; but all young potted-off plants from cuttings struck in summer and autumn must have more attention, and as much exposure to the light as the position can command, and fresh air on all favourable opportunities.

The *Camellias*, *Azaleas*, and *Daphnes* are the next hardiest; but in such a temperature and aspect, and with no other place to shift them to, they will not bloom until spring. The best treatment has recently been given.

The *Torenia*, *Begonia*, and *Gloxinia* are too tender for such a house, and the keeping of them will be injurious to the other plants by giving them too much heat, or preventing them having enough of fresh air. This is especially the case with these three kinds of plants when young and growing freely; when older they will stand rougher treatment in winter. For instance, I have wintered the beautiful *Torenia* in an average temperature of 45° when the plants were nearly a twelvemonth old, and had been put gradually into a resting state by just keeping them green, but with plenty of air, and no more water than was sufficient to prevent them flagging. The *Begonia* I have kept in a temperature a few degrees lower by stripping away all the flowers and all the leaves, with the exception of a few very small ones near the base, and keeping the base of the fleshy stems and roots dry. When they had more heat and moisture in spring they broke freely. I have also kept old roots of *Gloxinia*, and, indeed, young ones when the leaves died down, and consequently in a torpid state, and the soil quite dry about them, in a temperature ranging from 40° to 45°; but in such a house it would be of no use starting these roots into growth until May or June, and then they would require a close, warm corner. To keep young plants of either of these growing over the winter, our correspondent would require a small glass case, handlight, Wardian case, or something of that kind to inclose some little space near the gas stove, so as there to command from 5° to 10° more temperature than the general temperature of the house. Without that means it would be sound policy to discard these altogether, at least if old plants could not be obtained. Even then it is doubtful if great things could be done with the *Gloxinia* without the assistance of a hotbed or frame, as an atmosphere saturated with moisture, and ranging from 60° to 85° in temperature, are the conditions of growth in which they delight.

With these three genera excepted the *Heliotrope* is the most tender of those mentioned, and should be kept at the end of the house next the stove. The younger the plants the more tender they are. Old plants with woody stems and smallish leaves will stand more air and coolness, provided frost is not admitted.

The *Tropæolum*, *Dielytra*, and *Lilium* may stand anywhere out of sight, and be kept dryish rather than damp until growth begins to appear. When done flowering and withered the *Tropæolum* tuber may as well be taken out of the pot, and placed among some sand in a pot or saucer. If allowed to remain in the pot it is as well to remove the earth from the sides of the tuber, so that it may be more easily seen and examined, and better dried. See, also, that there are no small tubers left in the soil. As this is one of the most beautiful things for giving employment to an amateur I will give the following outline of culture. As soon as you perceive an inch or two of the small thread-like shoot coming from the upper end of the tuber it ought to be potted. If the tuber is sound, and as large as your middle finger, a twelve-inch pot will be requisite; if half that size an eight-inch pot will be large enough. Some prefer placing them in small pots first, and then shifting. I like placing them in the flowering pots at once, though a little more care in watering afterwards is necessary.

Drain the pot well, place over the drainage a little moss or chopped straw, and then the roughest part of the mould, mixed with a little dried nodules of old cowdung, for the depth of several inches. Then fill up with the rest of the compost, consisting of pure, sandy, fibry loam, with pieces of peat earth and some flakes of decayed leaves. This soil should not be sifted, but roughish, a great proportion of it being of the size of beans and large peas. Place it firmly against the tuber in the centre of the pot, and give no water until the roots begin to run; and afterwards, until the pot is full of roots, be careful that the watering goes no farther than the roots. For some time, therefore, when the tubers are thus potted at once, no watering will be required except in a widening circle in the centre of the pot. If the soil is neither wet nor dry when used, that part not occupied by roots will be long in drying in the winter months. By the time the shoot is a foot long it should be fastened carefully to the intended trellis; and every few days in winter, and every day in spring, the shoots will want fastening in their place, so as to keep the base of the trellis full. If once the shoots get entangled, farewell to all attempts at future regulation. When a strong plant grows freely it will require a few minutes' training every day. When getting to a large size it will need a good amount of water. The shape the plant should assume is purely a matter of taste—a flat, a round, or a balloon-shaped trellis, two or four feet in height, answers well. A young Larch tree does very well for a support, as the shoots merely require to be laid properly among the branches to fasten themselves.

The *Dielytra* may remain in a dryish, not dust dry state, beneath the stage, or in any corner out of sight, until its shoots also begin to rise. Presuming that the drainage and soil are all right, instead of repotting, take a pointed stick and your fingers, and remove the surface soil to the depth of some inches, so that you do not hurt the roots, and fill up the space with a rich compost of loam and very rotten dung. The *Lilies* should remain in a state of rest until they begin to move, when they should receive similar treatment. Any place where they will be cool and secure from severe frost will suit them, and if the floor is damp, or they are plunged in a dampish substance, they will want no water during the winter. The soil should not be wet, nor yet dry, but in a medium state between the two extremes.

With such a collection it would hardly be right to add more to the few mentioned above, though I should like "E. C." to try a few *Cinerarias* for blooming early in spring, and a few herbaceous *Calceolarias* from seed sown in August. The aspect would suit them well, as they do without a vast amount of sunshine, and the variety of colours would be very attractive. In April, May, and June a better place could hardly be chosen for them.

Supposing that a little plant of most of the things mentioned were kept, but that the beauty of such a house were to depend chiefly on four or five things, I would have *Chrysanthemums* of the small kinds for early winter grown, of course, out of doors in summer; *Jasminum nudiflorum*, and Tree Carnations, and Wall-flowers, grown in the same way, to succeed them. A few bulbs, helped on in the kitchen, to succeed them, with a *Cytisus*, a *Daphne*, or a *Camellia* to lend its attractions; the *Cinerarias* and *Calceolarias* for spring and early summer, *Pelargoniums* for summer, and *Fuchsias* for summer and autumn. If there was no garden at all, in which many of these things should be grown or kept for certain periods, side balconies at the windows would answer, but would involve more trouble.

The general treatment during the winter, as respects watering, &c., will be found in the articles on window gardening; but, in the hurry of writing, the matter of air giving was not treated upon explicitly enough. As the conservatory referred to must, on the whole, be

viewed in the winter months as a preservatory rather than a conservatory; in other words, a place for keeping plants healthy rather than growing and flowering them freely, a little air should be given freely when the atmosphere is clear, and the external temperature averaging 40°. Even in cold weather a little air should be given to change the atmosphere of the house, even though fire heat should be used to neutralise it. Some people have been surprised at the small amount of air I and others sometimes give, not because we do not like the fresh air in tolerable quantity, but because the giving of much involves, in many cases, a great addition to the coal bill. When air is very frosty it should not strike directly upon a plant in the house before it is heated and softened. When the plants are a little distance from the roof, and small openings are made in the highest part, the heating and moistening of the air are effected before it reaches the plants.

R. FISH.

HINTS ON FORCING FRUITS EARLY.

It has often occurred to my mind that we gardeners, in attempting to obtain early Grapes, Peaches, Nectarines, Cherries, &c., do not sufficiently study the principles of action by which such early fruits may with certainty be obtained. We are too apt to follow the old practices, such as our forefathers laid down for us and taught us. Hence our success is uncertain and inconstant. In dry, favourable seasons we succeed moderately, and in wet, ungenial ones we fail. The grand object of forcing is to produce fruit at an unusual season. We can imitate Nature in turning winter into summer as far as regards internal atmosphere, warm showers, and heated draughts of pure and fresh air. The only thing we cannot imitate in that dreary season is light; we cannot make artificial sunshine. Hence our forced fruits are deficient in colour, which sunlight only can give; but, though not so blooming as summer fruit, yet in flavour, size, and quantity we may, no doubt, succeed very well; and I need not say how acceptable to the sick invalid, perhaps tormented with excessive thirst, are a few Grapes, Strawberries, or any fresh ripe fruit. To them the relief is most grateful. With a space covered with glass, heated by hot water, together with proper soil and right management, we may succeed in obtaining early fruit sufficiently perfect to be invaluable to the sick, and very acceptable to those who may be in health. The question naturally presents itself to the mind of a young or ignorant cultivator, What are the points of culture that I must attend to in order to succeed in producing early crops of fruit? and others may inquire, What is the cause of failure or partial success? I will endeavour to answer the latter queries first.

I think the failure in the crops on the Vine arises from the roots. The roots are, in most places in the country, situated in a border outside the Vinery. There they may be subjected to a great degree of cold, whilst the branches are in a warm, genial atmosphere. This is, as common sense dictates, a most unnatural state. Good gardeners try to obviate it by a thick covering of litter or leaves. Some carry this out so far as to even make a slight hotbed on the surface of the border. My objection to these palliatives is that the roots are still in a much colder medium than the branches. I remember when I was gardener to the Rev. James Armitage Rhodes, at Horsforth Hall, the Vines were planted outside, and to keep the frosts from the roots we not only covered the border with litter, but went to the expense of covering the litter with waterproof canvass. It might have been expected that this covering would have been effectual, and the crops of fruit good, but it was far from being so; I mean in the Vineries that we

commenced to force in November, in order to have ripe fruit about April or May. As I said, the success was very moderate indeed. In some places I have seen the stems of the Vines as much as two feet outside the Vinery, a wall that height supporting the structure. Imagine a hard, long frost, and that stem, though well wrapped up, exposed to it, then the next morning a bright sunshine—imagine then the effect. I have seen the young leaves droop, and the bunches of fruit curl up and come to nothing. Now, my remedy for this state of things is simple and effectual. Let the Vines in all the houses that are forced be planted inside, and not allowed to get into the cold border outside at all. Observe the difference then. The root action and the top action are both at work simultaneously, and all will progress satisfactorily together. Water should, of course, be applied liberally; but it should always be within a few degrees as warm as the internal air.

Another cause of failure is the too rapid expansion of the leaves. All forcing should be done gradually. When the glass is put on the internal heat should not exceed the previous one more than 5° or 6°. In a fortnight that heat may be increased to 10° above the atmosphere out of doors—that is the average. Plenty of air should be given, and the Vines should be syringed frequently with tepid water. I always imagined that frequent syringing had the effect of softening the hard outer bark, and thus allowing the more free expansion of the inner wood, besides keeping the atmosphere in a moist condition. The heat should be gradually increased, being the first fortnight 45°, the next 50°, the next 55°, the next 60°, and lastly 70°. All these temperatures to be day heat. In the night the heat may be allowed to fall 5°. Equal temperature day and night is most unnatural, and, I am certain, injurious, especially in the short days of winter.

Mr. John Mearns was once gardener at Walbeck, and thought he had hit upon a great thing when he went to the expense of forming flues under the Vine border. This was entirely against Nature. For half the expense he might have covered the border with glass, which would have kept his border dry and sufficiently warm if covered with mats in very frosty weather. I never saw a border so covered, but have no doubt it would answer admirably. Another improvement would be, for early crops, to make the border very shallow, with plenty of drainage underneath. That precaution would have the effect of causing the Vine to make short-jointed, sound wood, always of advantage in causing fruitfulness. I would not advise more than a foot, or, at the farthest, fifteen inches of soil; but that should be frequently enriched with top dressings of well-rotted manure, forked in carefully just before the leaves fall. A considerable difficulty occurs towards the end of summer in preventing the Vine from starting its buds. I generally found it necessary to shade them from the sun, and by so doing prevent them starting prematurely. As soon as the leaves had fallen I pruned the Vines, and then kept them as cool and dry as possible, both at the root and the top. For early Vines I always adopted the spur system, taking care to have at least one prominent bud to each spur, and also never to leave more than one bunch to each spur.

I have thus far confined my hints to forcing the Vine early. Pretty nearly the same hints apply to the forcing of Peaches, Nectarines, and Cherries. The same precaution should be taken with regard to having the roots under protection. The best Peach house I have seen is one at C. Mills', Esq., Hillingdon House, near Uxbridge. It is span-roofed, the trees are planted on a border on each side of the house, a wall running down the middle. The trees are trained on an arched trellis, and when I saw them about two years ago they completely covered the roof, and were as fruitful as could be wished. There

the principle of having the roots in action as well as the branches is carried out to the greatest perfection. All Peach houses ought to be so managed in order to insure good early crops of well-flavoured fruit.

Cherries are more difficult to force early. In the gardens belonging to the Earl of Derby, at Knowlesly Park, near Liverpool, there are the finest Cherry trees for early forcing in England. They are grown in large pots, and are at least six feet high, well furnished with branches. I have seen them literally covered with blossoms and fruit. Mr. Jennings, the gardener there, manages to force Cherries above the common run of success. He, however, as I understood, has so many trees, that one half are forced one year, and then are plunged in the open quarter for the following season. The other half are then forced, and thus year after year alternately. I believe the Cherries in the Royal Gardens at Frogmore are managed in the same way, and are nearly as successful; but the trees at Knowlesly are older and larger, and consequently, with careful management, yield larger quantities of fruit. In the gardens at Heaton Park, near Manchester, the Earl of Wilton's seat, Cherries are forced very successfully in exactly the same manner. These examples show that the method is a good and certain one to obtain this refreshing fruit at an early period of the year. The practice bears out the principle I am advocating, of having the roots in action at the same time as the trees are growing, blossoming, and bearing fruit. Early fruits should always be impregnated. The pollen action is weak for want of sun and air, and, therefore, should be assisted as much as possible. I think, if I remember rightly, the gardener at Heaton Park told me he brought a small hive of bees into his Cherry house when the trees were in blossom, and they dispersed the pollen for him effectually.

T. APPLEBY.

CUCUMBER CULTURE.

In former times "the first Cucumber of the season" was a feat in which neighbouring gardeners were wont to compete; not that any exhibition took place, but the one who was known to cut the first one in the season was thought to be entitled to the honours of that period. By-and-by, however, the more convenient application of heat rendered the production of them in winter a much easier matter than before, and that honourable emulation of trying to produce the first spring-grown one gave way to the desire of furnishing fruit of unwieldy length. This mistaken notion is dying away; and though some few growers patronise long sorts, yet the major part are content with those of a moderate length, and abundance of them. To the latter class I acknowledge myself to belong, for I never could learn that one fruit of twenty-four inches long was as good as three or four of half that length, and I am sure the shorter kind is the more prolific.

As the amateur will be anxious to hear about the growing of them, I may say that if he has no other means than that of an ordinary dung frame, he may with that compete at the proper time with any grower in the kingdom, the condition of Cucumber growing being so simple as not to be easily misunderstood.

Presuming he has turned and tempered his dung as directed in former chapters, he must make up what we will call his seed-bed, which is a rough bed, on which his smallest frame is set, and the seed being sown in pots is then plunged in the dung itself, covering the surface over with ashes or sawdust; if the latter, let some scalding water be poured over it first. Take care that the heat of the bed is not greater than the hand can endure, and also that no rank or unpleasant smell arises in the bed. If it does arise, remove the plants,

or rather, the pots that contain the seeds, as soon as they are seen forcing themselves through the earth, to some more genial atmosphere, if it is to be had. I mention this because the careless way in which seed-beds are sometimes constructed leads to misfortune.

Supposing all goes on aright, the seeds germinate, and the first rough leaf makes its appearance, the plants may then be carefully repotted, placing two plants in a three-inch pot, in light, rich soil, which, together with the pots, &c., has been warmed in the frame beforehand, plunging and attending them as before, and at planting a very little tepid soft water may be given; but the great agents of success at this season are sunshine and a nice brisk heat.

When the plants are in this condition, the fruiting bed may be prepared, which, being intended to last some time, ought to be more carefully done, in the way of properly tempering the dung, and when ready, the frame may be at once set on, and if no danger from overheating appears, cover at once with a mixture of turfy loam and leaf-mould, forming hills under each light in the usual way at least ten inches or a foot deep, and into these hills, when they have become warmed, turn out the Cucumber plants before they have filled the pots with roots. Usually, cracked or inferior pots are used for this, in order that they may be broken, at the time of turning out, without injuring the ball, which could hardly be done by the ordinary way of turning it upside down, and the importance of securing an unchecked growth to Cucumbers overrules all notions of economy in such matters. A little water may be given at the time, and if the bed be warm a little air may be given at back to let out any steam or undue heat, more especially if the days are sunny. Covering up at night with mats must also be strictly adhered to; but if steam arise, leave a little outlet at back for its getting out.

If all goes on well the plants will soon put forth other leaves, and also shoots, which some growers stop immediately they are visible; but I allow them to get eight inches or more long before I pinch out the leader, and they more quickly form laterals then, which, as is well known, are the fruiting shoots. By this time, however, the roots of the plants will have occupied most of the hills, and will require additional earth heaped around them. This, as well as all other work or examination, ought to be done on the finest days, and with the frame only a little way open at a time, as a delicate plant like the Cucumber is very susceptible to cold; in fact, very little will completely kill it; but if the amateur be able to rear his plants until they have two or three large leaves, the most critical period is over, and they will grow away fast when longer days come.

In the early period of their growth small insects are not so troublesome as at a later period; but of larger insects the *Woodlouse* and *Pea Bug* are the most common. These insidious pests are the most fatal to the Cucumber, and unless checked will speedily devour a great number of small plants. The best remedy that I have found is to put a cooked potato amongst moss, and place it in the frame. Examine this frequently, and kill the insects enticed there. A toad or frog in a frame is also useful, and be careful not to introduce any plants or cuttings of plants that may contain anything in the shape of red spider, green fly, or thrips upon it, and let the earth be free from slugs, wire-worms, or other hurtful vermin. Then, with due attention in the way of giving air, covering up at night, renovating the bottom heat by dung linings, &c., a good result may be fairly expected.

I have, on former occasions, refrained from giving any opinion on the kinds most suitable, as my opinion does not coincide with the fancy growers. A good

bearer, and one that cuts up and eats well, are to me more important points than one of extreme length; and if the amateur be at a loss which to have, I may add that I have found *Walker's Improved* answer pretty well, though I generally grow one not dignified by any high-sounding name; in fact, it may be said to be without a pedigree, but I am quite satisfied of its legitimacy. It is a sort of cross between the *Black Spine* and *Syon House*; but Cucumbers vary so much from seed, even when the latter is carefully taken from isolated plants, that I would not advise too much reliance to be placed on those reported to possess extraordinary merit. Nevertheless, for exhibition purposes, some of those advertised in this and other papers will be found useful.

As I shall, at another time, enter more fully into the general spring and summer management of Cucumbers, I need say no more here, save that I hope the amateur will take care and not neglect his seedling or young plants during the bitterly cold days and nights common at this season. Neither must he neglect to give them a little air when the sun shines, shutting them up, however, early in the afternoon; and, with a proper heat of 70° or upwards, his Cucumbers will grow apace, and produce useful, good fruit in abundance at the fitting time.

J. ROBSON.

CULTURE OF PENTAS CARNEA.

My success in the cultivation of the *Pentas* prompts me to lay the particulars of my practice before the readers of *THE COTTAGE GARDENER*. In doing so I may render a little help to the amateur or the unsuccessful in their attempts to cultivate this by-no-means-to-be-despised inhabitant of the stove. Its cultivation is perfectly easy, and when liberally treated will amply repay the cultivator for his trouble with its numerous well-grown white or rose-coloured flowers.

I would recommend a young plant raised from a cutting in July or August, that has been well kept through the winter until the last week in February or the first week in March. At this time turn it out of the pot, examine the roots, and, if required, carefully uncoil them, and pick out any apparent decayed fibre, as well as the drainage from the bottom of the ball. This I consider necessary treatment in the culture of all plants in pots.

Having done this, place the plant in a clean pot three sizes larger than the one out of which it has been taken. Let the new pot have drainage in it to one-fourth of its depth, the drainage being formed of equal portions of broken pieces of charcoal and the imperfectly-burnt lumps occasionally found amongst lime that will scarcely yield either to the influence of air or water. This kind of drainage I have found acts very favourably on the growth of many kinds of soft-wooded plants. The roots run through it in every direction, and wrap round the small pieces of drainage as though they were desirous of not losing that which they delight in. When this drainage is covered with a thin layer of rubbly turf there is scarcely any danger of its becoming so close as not to allow the surplus water to escape freely. I prefer rough turf rather than moss for placing over the drainages for this and some other sorts of plants, as with me the roots are not so subject to become spotted or cankered as they are when moss is used.

Next put in about one inch of the following compost, viz., two parts turfy loam, one part fibry peat, half part leaf-mould, and a small portion of silver sand, well mixed, but left rough. On this place the ball of the plant, fill in round it with the same compost, and strike on the sides with the hands. Water with tepid water, and, if convenient, plunge the pot in a mild bottom heat in a pit or house, the air of which is rather dry than otherwise, and which commands a top heat of 60° or 65° by day. If it is not convenient to plunge the pot, place it in any house the atmosphere of which is not saturated with wet, and the temperature of which ranges at 60° by night, and from 65° to 75° by day, admitting a free, uniform circulation of air on all favourable occasions.

I would remark that the *Pentas* is very impatient of the moisture or steam arising from dung or tan-beds, or even an excess of that thrown off by the pantiles, or radiating troughs of hot water or steam-pipes. The steam condenses on the leaves and stems, and forms a sort of liquid belt round the margin of the leaves and certain parts of the stem, which destroys the delicate membranes. This so causes decay that in some cases the amputation of the branches is rendered necessary.

After the plant has given indication of re-growth, shorten the branches to within two inches of the main stem, and when the roots have rambed to the sides of the pot, which is the safest guide to the knowledge of the change of pot being necessary, again shift into a pot three sizes larger, and proceed as already stated, using the same kind of compost as before, with the addition of a half part of thoroughly decomposed stable-dung. Thus continue to shift and stop when necessary until the first week in July, when, if no accident has taken place, the plant will occupy a fifteen-inch pot, with as many branches as is convenient pegged down at regular distances close to the soil, the ends reaching towards or over the edge of the pot, which must be shortened along with those that are not pegged down, taking care to leave those in the centre the longest.

Having prepared a quantity of neat slender rods and bast or small string, as the branches advance in growth stake and tie them at equal distances, allowing the tops of the rods to incline outwards as much as possible, gradually becoming more perpendicular and higher until they reach the centre, so that, when all are trained, the plant will present the appearance of a half globe or circle.

After the second shift give as much light as possible, and keep the foliage of other plants from overshadowing the *Pentas*. Give water freely when required, taking care not to apply it at a temperature less than 70°. This tepid water, I would observe, might be had always at command if, in building hothouses, &c., a tank was constructed sufficiently large, and either sunk below or raised above the ground-level of the house, and placed in the stock-hole, and as close to the furnace as practicable. Into this tank the water from the roofs of the buildings should be conducted by means of fall-pipes.

Every third watering, instead of plain water, give liquid manure that has been prepared from half-decomposed cow or sheep-dung and a small portion of soot. Before applying it, take care to dilute it with hot water, in order to raise it to the desired temperature.

When the weather is hot and dry, early in the morning syringe with tepid water, and if the green fly or the thrips should appear, use a liquid (the recipe of which, if I mistake not, I obtained from THE COTTAGE GARDENER) prepared in the following way, viz., to eighteen gallons of rain water add one peck of soot; after eight days add one peck of lime and one peck of pounded charcoal; stir occasionally for eight days more; strain through a coarse cloth, and it is ready for use. This, if applied in the evening of four successive nights, will totally destroy the thrips; but it will be found more effectual, especially in the destruction of the green fly, if four ounces of soda ashes be dissolved in two quarts of hot water, and added to the whole mass before straining off for use.

If it should be thought proper to keep the *Pentas* through the winter for the following season's cultivation, to prevent damping, to which it is particularly subject when the common course of cultivation is adopted, facilitate, as much as possible, the solidifying of the branches by exposure to the sun during the latter part of summer and through the autumn. From the beginning of November to the middle of February give a temperature of 48° to 55°, which will bear it through the rest period without any danger of suffering, and always permit the leaves to handle rather soft than full of sap before applying water; then give water freely.

The last week in February, or the first week in March, remove the branches close to the pot top, increase the temperature a few degrees, serve with water, and when the buds have well broken, turn the plant out of the pot; reduce the ball to a convenient size, and insert in as small a pot as possible, and afterwards give it the same kind of treatment as that already directed for younger plants.—B. B., near Halifax.

PEARS GRAFTED ON MOUNTAIN ASH.

In looking over a late number of THE COTTAGE GARDENER I find, among many other valuable things, some very useful directions for the management of *Pear-trees*, and I am glad to see you have taken up the subject; for Pears of all kinds, but particularly the finer sorts, have for a number of years back been a very precarious crop in this part of the country (Langholm, Dumfries-shire).

I am inclined to think that the real reason of this precariousness is simply because they come into flower about a fortnight or three weeks too early, the seasons being so much altered, and, consequently, the blossoms are either nipped by late frosts or blighted by east winds, which are very common with us during the spring months.

To obviate this I work Pears upon stocks of Mountain Ash, and not upon Quince, as formerly, and I have found it answer well. They are not only very fruitful upon these stocks, but the flow of sap being a little later, causes the blossom to escape the late frosts, rendering the crop more sure.—WALTER BALLANTYNE, Gardener, Eskdale House.

STENOCARPUS CUNNINGHAMI.

In Vol. XIV. of "Paxton's Magazine of Botany" is a beautiful figure of this plant, to which I beg to refer you. You will there see it stated that it has been flowered at Chatsworth, as well as at King's Road, and for a more detailed account page 21 of the same volume may be consulted. After those statements it would appear superfluous for me to say anything further; but if the following from my humble pen is of any service, it is with much pleasure I accede to your request in stating how I managed this plant, whose singular and beautiful flowers only require to be seen to command for it a place in every collection. Another great recommendation is that it will bear almost any amount of rough usage.

The plant which flowered here last summer is five feet high, growing in a mixture of loam and peat in an eleven-inch pot, which would appear small for the size of the plant, not having been shifted for two years. Last spring it was placed in a warm Vinery, and syringed well every day, with plenty of water at the root during the growing season. Afterwards it was subjected to all the heat and light at command to thoroughly ripen the wood. In the month of August I had the pleasure of seeing blossoms making their appearance, from different parts of the plant, on both old and young wood, since which time it has expanded a great many of its beautiful flowers, and I hope, if the above treatment is carried out, others will be gratified, and amply rewarded for all the care which this plant richly deserves.—THOMAS ANNESS, Gardener to J. W. Gurney, Esq., M.P., Old Catton, Norwich.

ROYAL GARDENS AT MEUDON.

By MR. ROBERT THOMPSON, Superintendent of the Horticultural Society's Orchard and Kitchen Garden.

We proceeded, March 9th, to Meudon, chiefly for the purpose of seeing the Pine Apple culture, in which M. Gabriel Pelvilain surpasses all competitors of the present day; and, judging from the vigorous and healthy appearance of the plants, they certainly bid fair to maintain the celebrity which he has already acquired. We saw at various establishments very healthy plants; but none equalled in luxuriance those at Meudon. We obtained the following details respecting the mode of culture:—

The suckers are potted in four-inch pots in August or September, the earliest period after the fruit is cut being preferred, and in these four-inch pots they remain till spring.

In March or April following a bed is prepared, half dung and half leaves, and covered with ten inches of peat soil, and into this the rooted suckers, turned out of the four-inch pots, are all planted for the summer.

In October the plants are carefully taken up with a little soil at their roots, which are not at all cut, and potted into seven-inch pots, in which they remain during the winter.

In the following spring, about March, when the plants show fruit, a number of the strongest are selected for the purpose of being turned out of the seven-inch pots, and finally planted, free, in a bed of peat soil, in houses, where they remain to ripen their fruit in the course of the season.

The remainder, not so planted out, are fruited without being shifted out of the seven-inch pots. Beds of half dung and half leaves are prepared about March, and when the heat has been properly regulated the plants are plunged, and there in the seven-inch pots they are fruited.

It thus appears that the plants are always in pots in winter. The suckers are in small pots the *first winter*. The plants are turned out into peat soil, free, during the *first summer*. All are repotted into seven-inch pots, and so kept during the *second winter*. In the *second summer* the strongest are planted out of the pots into peat soil for fruiting, and the remainder are fruited in the seven-inch pots, plunged in beds of dung and leaves.

There is certainly no great mystery as regards this simple mode of procedure. But the extraordinary size of the fruits of those planted out in peat soil, as mentioned in the *Gardeners' Chronicle*, vol. for 1856, and likewise the present luxuriant and remarkably dark green foliage of the plants, do not appear to be sufficiently accounted for by anything

very peculiar in the routine, although perhaps a better could not be adopted. The effect must be produced by some powerful agencies which we have not yet traced out. It will, therefore, be necessary to enter minutely into details respecting the position of the plants, and to direct attention to circumstances likely to influence their growth.

The plants, as already stated, are planted out in the fruiting-houses in a bed of peat soil. The depth of the soil is about fourteen inches, placed on a wooden flooring, consisting of boards laid side by side, and supported by iron bars.

The arrangement of the fruiting-houses will be best understood by a plan and sections, which I have the satisfaction of being enabled not only to refer to as published in the *Gardeners' Chronicle*, 1846, p. 820, but to introduce.

There are four fruiting-houses, which are heated with hot water and stable litter combined ; the stable litter for bottom-heat, and the hot water for surface-heat.

No. 1, with eleven lights, each light four feet four inches wide, is the largest, of which Fig. 1 is the ground plan, and Figs. 2, 3, and 4 different sections of it.

Nos. 2 and 3, with fifteen lights. They are in one line, and the middle light is occupied by the furnace, &c.

No. 4, with ten lights. The whole are constructed upon the same plan.

Fig. 1.

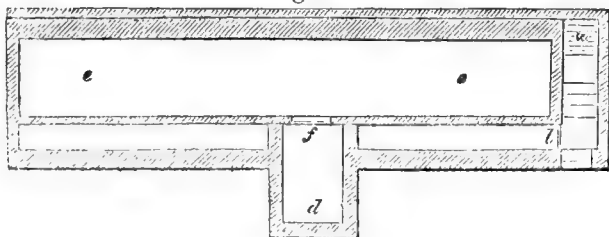


Fig. 2.

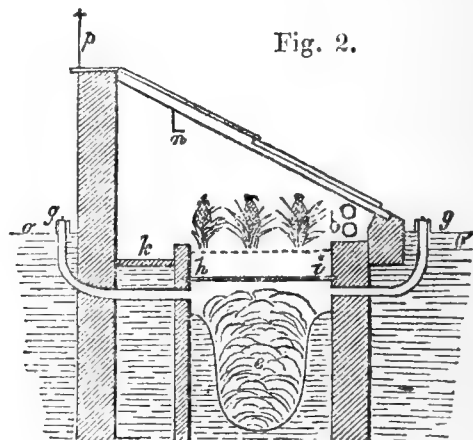


Fig. 3.

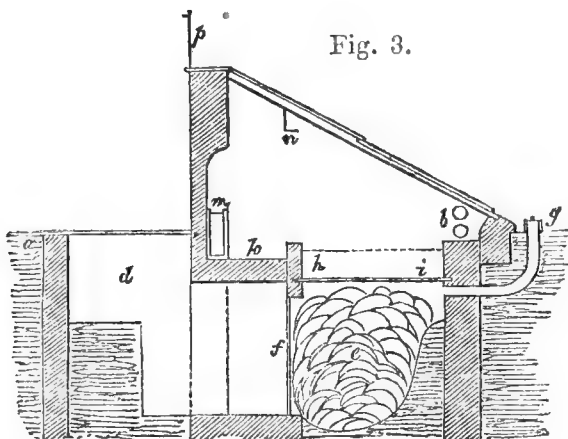


Fig. 4.

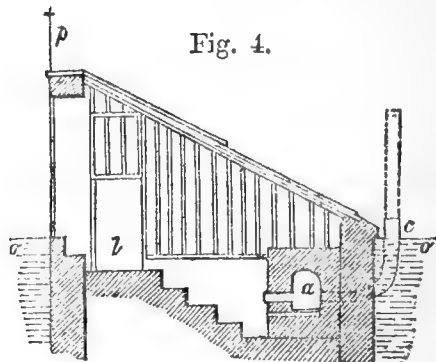


Fig. 1. Ground Plan of fruiting-house, No. 1 ; Figs. 2, 3, and 4, sections of it. In Fig. 3 is shown the manner in which access is had to the hotbed. Fig. 4 shows the entrance and the furnace, with a side view of the house.

a, furnace ; *b*, hot-water pipes ; *c*, chimney ; *d*, concealed pit to get at the hotbed ; *e*, hotbed ; *f*, door, which is shut up after the stable litter has been removed ; *g*, air-holes, furnished with a cover to regulate the bottom-heat ; *h*, bed filled with peat soil, in which the Pine Apples are planted ; *i*, iron bar covered with boards to hold the peat soil ; *k*, footpath ; *l*, door ; *m*, water cistern ; *n*, shelf for Strawberries ; *o*, ground line ; *p*, iron railings for hanging the straw mattings upon, which serve to cover the houses.

Air is given to all the pits when required by lifting up the lights.

The following analysis of the Meudon peat, *Bruyère de Meudon*, is stated to have been made with great care by M. Payen :—

Fine sand	62·
Roots and vegetable remains	20·
Humus	16·
Carbonate of lime.....	0·8
Matter soluble in cold water	1·2

100·0

The above can only be called good sandy peat with a mere trace of lime in the form of carbonate. The water employed is spring water. These substances apparently

constitute the only source whence the plants derive their luxuriance ; but in this respect they so far exceed others in similar soil, that it is evident they must have an additional large supply of nourishment to that afforded by peat soil and water nearly pure. •

The large stone-built vault below the beds happened to be empty when we were at Meudon, and we had an opportunity of satisfactorily examining it. The boarding overhead was, of course, somewhat decayed, from the action of the gases arising from the dung, and in various places the old roots of the Pine plants were hanging where they had insinuated themselves between the boards. When this vault is filled, or nearly so, with fermenting dung, an immense quantity of ammoniacal and carbonic acid gases must be constantly generated ; and they must as constantly find

means of escaping, not readily by the stone walls, but very easily by the boarding under the soil. Ammoniacal gas passes through the pores of wood much quicker than common air or other gases do. Liebig states, *Organic Chemistry*, page 86, that ammonia, "when in a volatile state, is in a great measure lost before it can be imbibed. When fixed, in the state of salts, its volatility is overcome, and not the smallest portion of the ammonia is lost to the plants, for it is all dissolved by water and imbibed by the roots." From the quantity of carbonic acid gas evolved with ammonia during the continued fermentation of the materials, carbonate of ammonia must be abundantly formed. This smelling salt every person knows is very volatile; but it will be in great measure absorbed by the moisture of the soil as it ascends into the latter. It has been proved that water is capable of absorbing 780 times its bulk of ammoniacal gas.

It was stated that the water employed was spring water, nearly pure. Unless distilled, no water is perhaps absolutely pure, since it always dissolves more or less of the substances with which it comes in contact. The water near Paris owes its hardness to the presence of gypsum. This circumstance may be of some importance as regards the Pine-growing at Meudon. "Gypsum (sulphate of lime) and other sulphates convert the carbonate of ammonia into the more fixed sulphate, which remains in the soil till absorbed by the roots" (Turner's *Chemistry*, page 1256). It is impossible to say how much water the beds of peat soil may have received in the course of the summer, neither is the proportion of sulphate of lime which it holds in solution accurately known. For an approximate calculation it may, however, be assumed that the quantity supplied would not be less than that of rain which would fall on an equal surface out of doors, say two inches in depth per month, or six inches in three months: this, during the latter period, would give 9350 lbs. for a bed fifty feet by six feet. If we, then, estimate the proportion of sulphate in the water to be only one two-thousandth part, we shall have in the above quantity of water upwards of four pounds and a half, which would fix double the quantity of ammonia applied to wheat crops in the garden of the Society, and which produced the remarkably dark green, luxuriant foliage which many will recollect having there seen in successive seasons for some years past. Ammonia, however, in any form, in solution with water, produces luxuriant dark green foliage.

From what has been stated it appears evident that the large Meudon Pines feed chiefly on the products of decomposition, supplied by fermenting materials in a capacious vault below the peat soil, in which they are planted.

The Peach-trees at Meudon are trained on the same principle as the Vines at Thomery, the shoots being trained upright from the upper sides only of the horizontal branches. Each tree has two such branches, extending, one right, the other left. The distance of the tiers formed by the horizontal branches of the different trees is about two feet and a half. The young shoots, trained upright in summer, are shortened to less than a foot in length at the winter pruning; and whilst they bear fruit in the following summer, a shoot for succession is trained from the base of each; or, if a shoot spring still closer to the horizontal, it is preferred. The trees are planted four feet apart, and are furnished with excellent bearing wood.—(*Horticultural Society's Journal*.)

BEES FED ON THE BOTTOMS OF SUGAR-CASKS.—Lately there was some discussion in these pages respecting the proper food for bees; and, in looking over some of my old correspondence with Dr. Bevan on that subject, I lit on the following notes. That good apiarian says, "Your remarks respecting coarse sugar are, I think, well founded, for I remember an apiarian friend complaining to me of having lost families of bees for several years, though he well fed them. On investigating the matter closely I found that an ill-judged economy had led to the use of the bottoms of sugar-casks. No doubt the bees died of dysentery." He also observes, "As respects many of those families which have undergone deprivation this season, no doubt feeding must be had recourse to. In my own apiary I find not only those but most of my swarms of the current year require it. However, a hundred weight of honey is well purchased by half

a hundred weight of sugared ale." As the season advances weak bees should be fed, and the hives kept warm and dry to encourage the growth of the brood, on which further success depends. In feeding let the remarks of Dr. Bevan not be lost sight of.—J. WIGHTON.

BERBERIS PARVIFLORA.



PRESENTED to the Horticultural Society when a small plant, about three years ago, by Messrs. Lee, of Hammer-smith, who were not aware from whence it came.

Leaves about one inch and a half long and three quarters of an inch wide, glaucous on the upper side, clear green on the under, with from three to five spreading spiny teeth near the end. Flowers as deep a yellow as those of *B. dulcis*, in a few-flowered raceme as long as or a little longer than the leaves, unusually small in the genus.

A small hardy evergreen, well suited for planting in situations where neat and choice shrubs are the objects required. It flowers freely in May.—(*Horticultural Society's Journal*.)

QUERIES AND ANSWERS.

CLIMBERS FOR POLES.

"Would you have the kindness to inform me, through your answers to correspondents, whether a climbing Rose or Wistaria would do for a bamboo pole? Perhaps you would guide me as to the most suitable, and as to the time of planting and soil adapted for them."—T. J. WATSON.

[The answer to this question depends, first, on what part of this kingdom the bamboo pole is to be set up. Anywhere in England north of London we would not recommend a pillar Wistaria. Secondly, what is the inquirer's taste? which plant does he desire to cultivate? If this bamboo pole is to be set up in the plains of Devon, or some such-like plain, where a pillar Wistaria would grow and bloom as well as a pillar Rose, which of the two would you prefer? We would select the Wistaria, and prepare a border for it as we would for a Grape-vine in every particular; we would travel one thousand miles to find a Wistaria worth planting. It

would need to have been growing for the last three years in a pot, and the last season's growth to be over four feet. Ninety-nine Wistarias out of a hundred, if pinched in pots, are not worth a groat the dozen. It seldom happens that a Wistaria under 5s. 6d. is worth having as a gift. The fact is, people do not yet understand the treatment of this tree. Our pillar Wistaria should be pruned exactly like a Pear pyramid at Paris. We have not seen a good specimen pyramid Pear in England yet to refer to. The end of February would be a good time to plant either the Wistaria or pillar Rose.]

HEATING A PINERY.

"I am about to construct a Pinery eighty-six feet long by fifteen broad, and to take the third part of that length for a succession house by putting a partition of glass between, so as to form the range into two houses; two-thirds of the length for the fruiting house, and one-third for the succession house. The bed in the centre will be about eight feet wide, and a path, perhaps, about two feet wide, to go all round the house close to the bed. Now, for the best mode of heating such a house I am at a loss, consequently I am compelled to apply for advice. I should like it to be heated with hot water, both top and bottom. How would Mr. Rendle's tank system do as described in THE COTTAGE GARDENERS' DICTIONARY? Should that plan be adopted, what sized tank would be required so as to have plenty of heat at command? What distance should the bed be above the tank? and what depth of soil in the bed, as I wish to have the Pines planted out in the bed, and not in pots? I should like the whole to be heated with one boiler if possible.

"Will you also add how Mr. Weeks manages to heat his establishment, either the whole range or one house at pleasure? Has he a main pipe, and every house supplied from it?"—I. P.

[If your tank were six inches deep, and the width of your pit, with an open chamber of clinkers, &c., above it, a foot deep, covered with gravel, and slides communicating with that chamber, and means of throwing water over the slate covering of your tank at will, we believe it would give you enough of bottom and atmospheric heat, the slides enabling you to regulate both as you like. A large size of Rendle's boilers would heat such a tank well, and so would one of Thompson's retort boilers, and so would one of Messrs. Weeks' medium size. We have nothing to say on behalf of tanks or of pipes more than has already been advanced. In many cases we should be but too happy with either to decry the other. For a house of that length, and were we to study simplicity, we would borrow from our friend Mr. Fleming, at least so far:—We would have the boiler in the centre; take three or four four-inch pipes from it for atmospheric heat, and bring them back under the bed for bottom heat. By this means no stops or cocks are required. Supposing three pipes were required for top heat, two in front and one at the back, and you returned all under the bed, you would need altogether more than 500 feet of pipe. If you had a tank three feet wide or so, you would require extra pipes for top heat. You could easily heat one half without heating the other, and you could heat top and bottom separately; but then the expense will be increased for stops and plugs, &c. Nothing can answer better than Mr. Fleming's plan of returning the pipes below the bed. If pipes are used, they must be rough chambered, as above the tank, and the soil must be from fifteen to twenty inches deep.

Mr. Weeks has two main flows and two main returns, one for tropical, the other for hardier plants. In No. 386, Feb. 19th, 1856, or page 365 of Vol. XV., you will find an article on the subject.]

NUTT'S COLLATERAL HIVE.—MOVING BEES.

"I have a Nutt's collateral bee-hive, which I purchased in May of this year. I could not get a swarm until the 26th of June, on which day the bees were placed in the centre box. On the 9th of July, perceiving that they were clustering very much about the entrance of the box, I placed a bell-glass over the centre box, into which they immediately

went; but, finding they left it at night, I put some wool over the glass, whereupon, on the 30th, they remained, and were soon busy constructing their combs. On the 31st of July, as they seemed still much inclined to hang at the entrance, I removed the slide which separates the centre from the side box; they immediately took possession, and there, also, have left a large comb, though, as it was then late in the year, they did not deposit any honey there. It, however, had the desired effect of checking any disposition to swarm. On the 13th of September, having reason to suppose the bees had laid up sufficient for their support during the winter months, and observing that the glass where they had commenced their operations on the 30th of July was filled with combs, and that the combs were for the most part supplied with honey, I, with some little trepidation, being a beginner, took off the glass, and carried it a distance of thirty or forty yards, resting it on four bricks; but, finding the bees did not quit speedily, and supposing the queen might be with them, I replaced the glass about 1 P.M. Two hours after I again removed the glass, and placed it as before, not a single bee on either occasion attempting in the least to molest me. In a quarter of an hour every bee but two had quitted; and, much to my satisfaction, I carried off the *spolia optima*. All the bees are now in the centre box. I have, up to this time, left the bell-glass over the aperture which communicates with the top of the centre box, thinking thus to encourage ventilation, and to prevent damp forming within the centre department. I have also left the aperture open between the centre and side box. My first query is, Had I better insert the slides between these two apertures, or either of them, or leave them as they are? My second is this—There is a feeding drawer at the back of the centre box. When it is opened to place any food therein the zinc slide which covers the opening in the floor of the centre hive at the back falls down, and the bees at once rush out. Is there no remedy for this defect? I think of purchasing another hive in the spring. Would you recommend Neighbour's improved cottage hive, price 35s., or one of Taylor's single bar hives at 52s.? The non-killing system is utterly unknown in these parts; and, as I hope to introduce it among my parishioners and neighbours, you will, I doubt not, be the more willing to impart the desired information."—A DEVONSHIRE RECTOR.

[You appear to have managed your Nutt's hive judiciously on the whole; but the period is arrived when greater care is requisite to keep up a due degree of warmth, as brood will soon be present in the family box. When this is the case the glass super should be closed at the top, and the communication with the side boxes cut off by the insertion of the slides. This latter precaution ought to have been taken early in the winter, as extra space is not then needed. We are not particularly fond of Nutt's hives, and dislike his plan of feeding in a drawer, into which the bees are apt to get, and become chilled. However, the zinc slide mentioned need not be removed, except when wanted in the spring or autumn in fine weather. It is rather a difficult matter to recommend any particular kind of hive, so many circumstances must be taken into the account, saying nothing on the score of cost. Much must depend upon position, whether within a building, a bee-house, or in exposure to weather in the open air. We are not very friendly to the latter when there is any alternative. The non-killing system is compatible with almost any description of hive properly understood, and the cottager, with a two-shilling hive, can as readily obtain the honey by fumigation as by suffocation, adding the displaced bees to some stock in need of additional population. As respects Mr. Taylor's single bar hive, alluded to by the "DEVONSHIRE RECTOR," the author himself does not place it foremost in the list of hives explained and illustrated in the last edition of the "Bee-keeper's Manual," where it is only named as an expedient to save a little trouble and expense, and in the absence of a bee-house, which latter is always desirable for wooden boxes of all kinds. Either Neighbour's cottage hive, or Mr. Taylor's straw bar hive, with its moveable top, would doubtless answer, placed within a house or bee-shed at a moderate expense. We trust neither the "DEVONSHIRE RECTOR" nor any other of our correspondents will be guilty of attempting to remove a family of bees, with its combs, from one hive to another, in the manner detailed by Mr. Shirley Hibberd in our publication, page 243. At no time

is this expedient; but the word employed by him, "fool," is the only one suitable to the person who would set about doing it in the month of June, in the height of the season, when the hive is filled with stores and brood to overflowing.]

NOSEGAY AND OTHER GERANIUMS.

"I am most anxious to have a few Nosegay and continuous-blooming Geraniums, but know little or nothing about them, neither have I found any one who can give me any satisfactory information about them. I would now ask you to publish the names of six of each sort. I should also like to know to what class of Geraniums *Quercifolia rosea purpurea*, *Fair Helen*, and a small *Gooseberry-leaved* (sweet-scented) belong."—GEORGE POOL.

[At present we believe there is only one kind of Nosegay Geranium to be had in the trade, the pink Nosegay or purple Nosegay—the colour is a shade of pink and a shade of purple—and that because there is no demand for them, or rather, because there *was* no demand for them. There are six or seven beautiful bedding Nosegays in private gardens. Ladies prefer them for beds, and Sir Joseph Paxton offered very handsome prizes for them at the Crystal Palace without "bringing out" a single kind, and THE COTTAGE GARDENER has spread their fame to the ends of the earth. We have now two letters on the table from Australia quoting from our pages, and giving handsome orders to the trade on the authority of THE COTTAGE GARDENER. The Nosegays belong to the scarlet Horse-shoe section, and all of that breed are *naturally* "continuous bloomers." The old kinds of greenhouse Geraniums are not naturally continuous bloomers, but some of them bloomed very early, and some very late; then, by crossing these *verys*, an intermediate race of continuous bloomers has been obtained, and from these the best *fancy bedders* are selected, and, to distinguish them farther from their summer-flowering parents, they have been called hybrid perpetuals, like Roses. The best sorts of any *fancy* are those which one likes best. Our selection generally includes three kinds of *Diadematum*, the *Old Diadematum*, the *Diadematum rubescens*, *bicolor*, and *regium*; then the *Ignescens* breed, of which *Lady Mary Fox* is the best; then the *Quercifolia*, or Oak-leaved, of which *quercifolium* and *quercifolium coccineum* or *superbum* are the best bedders; and lastly and most lustily, the race of *Isidoreanum* has produced the best of the continuous flowers, which is called *Dennis's Alma*. See an account of it in Hampton Court Gardens in our last volume. *Quercifolia rosea purpurea* and *Fair Helen* are of the Oak-leaved section; the *Gooseberry-leaved* is of the *Citriodora* section.]

FORCING VARIEGATED MINT AND CERASTIUM TOMENTOSUM.

"Will you inform me if the *Variegated Mint* will stand forcing in the spring to make cuttings from, like *Verbenas*, &c.? I have a pot of it, and want to make the most of it. Will *Cerastium tomentosum* stand the like treatment?"—ARTHUR LOFTUS.

[The *Variegated Mint* may be set to work any day from the 20th of January to the end of May, and be treated by amateurs just like the *Robinson Defiance* Verbena all that time. But fast gardeners would think nothing of filling a box with plain Mint, or Parsley, or curled and triple-curved Parsley and *Variegated Mint*, putting them into a pit with Pine Apples or air plants, and getting thousands and thousands of cuttings from them; but people should never *run* in gardening till they can walk, nor walk till they learn to "step it." It is the anxiety to learn all at once, like getting rich all at once, which leads to the "broad way" of disappointment.

The Crystal Palace gardeners are, perhaps, the only gardeners who could tell about the *Cerastium tomentosum* in heat; but they are such nimble fellows we can never get up to them to ask anything, and till we do, take our best guess, and try the *Cerastium* exactly like *Salvia fulgens* for cuttings, and you may depend upon being safe. Any heat up to 55° or 60° will not hurt it.]

HYBRID PERPETUAL ROSES.

"Being about to purchase a dozen Hybrid Perpetual Roses I should feel obliged if Mr. Beaton would name them in THE COTTAGE GARDENER. I want the very best sorts, new or old I do not mind."—AN AMATEUR.

[The best twelve Hybrid Perpetual Roses do not depend on the smell, the size, the doubleness or singleness, or on the freeness or shyness of flowering, neither upon constancy or inconstancy; and all that has hitherto been written on either side of the question is just so much sense thrown in the air. The question turns upon two hinges: whether the kinds are "worked" low or high, or are only on their own roots, is the top hinge; and the kind of soil to grow them *on*, not *in*, is the bottom hinge. Keep these hinges well oiled by common sense, derived from more *common* practice, not *fancy* practice, or *commercial* practice for "turning a penny," and you will never want for Roses. Roses are more influenced by soil than either Pears or Grapes, and the wild Dog Rose *more so* than most of the Hybrids. Unless the soil is strong loam inclining to clay, a Hybrid Perpetual will grow on it better than does a Dog Rose; therefore it is better on its own roots than being worked for that soil. If a Hybrid Rose is of a dwarf or even moderate growth, and is worked on a Dog Rose, which is naturally of a most robust constitution, which constitution is greatly excited by high cultivation, the more moderate growth of the head perpetual will so curb the *tendency* to exuberant growth in the Dog-Rose stock in a year or two as to turn it to ill health, otherwise called sulky and "not doing well;" therefore that dwarf or moderate-growing Hybrid Perpetual would do better on its own roots in that soil, or in the best Rose soil, than on the Dog Rose, on account of its natural tendency. A very strong Rose, or a very free-growing Rose, will grow better on a Dog Rose in good soil, but not in bad soil, than on its own roots, because the roots of the Dog Rose will bear the ill effects of a wet or cold bottom better than the roots of the strong-growing Rose; but if the two, the worked strong Rose and the strong Rose unworked, were to be taken up every other season, so as to have their roots more numerous and nearer the surface, the unworked plants would do the best, as we might infer, from their being in a more natural condition.

In all soils which have not proved first-rate for growing Roses, or say a thoroughly good Rose soil, we prefer *all classes* of Roses on their own roots. There is no test to prove a soil to be "Rose soil" without first trying Roses on it, and some Roses are very peculiar as to the soil they do in best. *Gloire de Rosamène* and *La Reine* are instances: where one of them does well, the other is certain to do very moderately. There is not a man living who can tell the best twelve Roses for another man at a distance from him. All that the most experienced can do is to fix on such kinds as do well generally, and in most seasons; the rest must be determined by individual experience, each one for himself on his own soil and locality; the locality has as much to do with this as the soil itself. Some seedlings of all our favourite plants go off very much after the first flush. Roses and Dahlias are notorious for that; therefore any Rose that has not been six years in cultivation cannot be said to have been proved for that country, or county, or climate. The following are the best Hybrid Perpetual Roses in the greatest number of instances:—Géant des Batailles, Baronne Prevost, Duchess of Sutherland, Mrs. Elliot and La Reine (two uncertain kinds, however), William Griffiths, Madame Laffay and Madame Rivers, Pius IX., and Robin Hood, Général Jacqueminot for brilliancy, and Dr. Marx, or Robin Hood, or Auguste Mie, or Baronne Hallez; but after the first six or eight there are a dozen of about equal merit.]

TO CORRESPONDENTS.

HEATING A CONSERVATORY FROM A KITCHEN BOILER.—The last paragraph in answer to "JANE FORREST," page 183, is hardly so clear as it might be. If the pipes could be fastened to the boiler on the opposite side from the fire, lead pipes would do as well as any. Much trouble would be saved if the supply cistern for the boiler could be reached from the greenhouse level, and the person who attended the plants would see it was kept supplied with water. It matters little where the taps for allowing the circulation are placed, whether in the kitchen or the fireplace. We had a mournful tale of expenses and disasters for a small greenhouse the other day. It was about five feet

above the level of the kitchen, and seven feet from it, and the boiler there would have saved most of the expense.

DIADEMATUM (*Crumbs, Sydney*).—It is very gratifying to know that there are those, as you term it, "on the wrong side of the Atlantic," who are anxious for our correctness and well-doing. No man knows better than Mr. Beaton that he employed bad Latin, and no one knows better than he does that it is no defence to say that others, in naming flowers, have done so before him. Two negatives make an affirmative sometimes, but a myriad of similar mistakes will not convert the last mistake into correctness. Since you wrote in December you will have seen all that has been published in our pages on the subject. You conclude your welcome letter by saying, "If any gardener is desirous of seeing exemplified the prosecution of horticulture under difficulties, let him repair to this portion of the globe. The rigours of the climate, the sudden and prodigious transitions of the temperature, and the hardness of vegetation, are such as a native of the British Isles would scarcely credit without personal experience. I may present you a chapter on these subjects some day if you consider it would be interesting." In reply, we know of nothing more interesting than such communications, and you will increase the obligation by imparting to us your name, that we may, if necessary, point out information which we desire to have.

KITCHEN GARDENING (*A New Subscriber*).—Every one of our numbers contains more or less on the subject. If you need a guide for each crop's culture, buy "Kitchen-Gardening for the Many," which is obtainable at our Office, price fourpence.

INSECTS IN VINERY (*Inquirer*).—The white insects running about the pots over the fermenting leaves are *acari*, or mites, and have no relation to the aphids. They feed on decaying vegetable matter. If you put any definite questions relative to the culture of Figs and Roses in pots we will do our best to answer them. Buy the last edition of Smith's "Introduction to Botany," edited by Macgilivray.

CUCUMBERS IN POTS (*Nemo*).—With the exception of preferring nine or twelve inches of drainage over the tank, we have no doubt of your success, whether you use pots or pipes of the size you specify. If you had some small pipes, say one or two inches in diameter, resting on the slate, through which you could pour water, you could always command a moist heat and moisture to the roots. A hole made in your boxes half an inch above the slate would at once show the height of the water.

FRAME TOO DAMP.—**COAL-ASHES** (*Frenchman*).—The only thing you can do with your frame pit is to raise the bottom with dry cinders as much as possible above the surrounding ground. Your air-giving is all right. In damp weather a piece of lime, or a large bottle or two, filled with warm water, will cause the air to circulate. Such things as fancy Geraniums cannot be kept so safe as in a place artificially heated. Do not use your small ashes for growing pot plants, but they will do good to your clay soil.

ORANGE POTTING (*A Clodhopper*).—We would repot the plant in March or April. As to pruning we would merely shorten any straggling shoots a little in the middle of February. For plants in houses see an article next week.

TREATMENT OF MESEMBRYANTHEMUMS (*A. B. C.*).—You will find something on them lately, but we will attend to your request.

VARIOUS (*J. R.*).—Few of the Acacias you speak of are worth raising from seed, but we will think over your letter. Are you sure the flow-pipe comes from the highest point of the boiler? Your will not err, however, in using an inch-and-half pipe, or even two inches, instead of three quarters of an inch.

VARIOUS FRUITS IN ONE HOUSE (*Arthur Connell*).—You shall be fully answered next week.

STABLE DRAINAGE (—).—This may be put on to Asparagus, Rhubarb, and Sea-kale beds, without being mixed with water; and so it may on to vacant ground about to be dug. It may be used mixed in the proportions of one of drainage to three of water to all growing kitchen-garden crops. Do not pour it over seed-beds or seedlings. *House sewage* is the mixed drainage from the sinks and water-closets of a house. We prefer the paint mentioned in *THE COTTAGE GARDENER*.

CESSPOOL (*A Lover of his Garden*).—Do not mix quicklime with it. It sets free, does not destroy, the ammonia, and lets it escape into the air. You may use the liquid portion precisely as we have advised in our preceding answer about Stable Drainage. The sediment or solid portion you may spread over any vacant ground in the spring, and dig it in. It will suit any of the Cabbage tribe. Do not dig at all near your Vine, but use a fork. We know of no Grape called *Sir Joseph Paxton*.

HERACLEUM GIGANTEUM SOWING (*A Subscriber*).—Sow it in March. It thrives best in a rich, moist soil.

PRUNING APRICOT-TREES (*T. J. Watson*).—Prune off one-third of the length of the young shoots.

RUSTIC WORK (*Rusticus*).—We wish that some one would send us drawings of tasteful rustic work. We cannot meet with any.

JARGONELLE PEAR (*J. Williams*).—Your Jargonelle Pear is doing well; indeed, it could not do better. All you have to do is to cut the *young wood* of the leader down to half its length, which will be sufficient to develop both the buds of the previous year's wood, and also some of the lower ones on the leader itself. If, during the growth of last summer, you had kept pinching off the points of the leader, you might have had the buds on the two years' wood developed into side-shoots. Your tree is in excellent condition.

FORMING A SMALL LAWN.—**WINTER TREATMENT OF GREENHOUSE PLANTS** (*Stephen R. Rogers*).—For all the space you have to cover your cheapest plan would be, in the long run, to turf instead of seeding the lawn, and if you can get the turf from a dry common the grass will be finer than from a meadow. If we were sure of the turf we would put it off till the beginning of April; then dig the present grass over, but not deep, say the breadth of four feet crossways; tread over it, and then rake it down level; turf that, and then dig another space, and so on. The

price of turf varies exceedingly. Any of the nurserymen near you (Bristol) would tell you the usual charge there, and the custom of measuring it.—Your plants are doing pretty fair. The *Tom Thumbs* are on getting paler leaves, not white ones; they always do in the spring, and a good sign. Go over them as often as you can, and cut off or cut off every morsel which damps, blackens, or quite shrivels. Stir the surface and if you have time, get rid of the first quarter of an inch from the top of all your pots early in January, and fill up again with fresh, dry, rough-sifted soil. It would do a wonderful deal of good to the plants, but, before doing so, if you could get a tub of water close to the frame and a scrubbing-brush, and clean all your pots first, and after they were dry to surface them, you never saw such a change as it would make. The plan is very old, all but the cleaning of the pots, but not the worse for that. We had all our pots of that kind of stock served just in the same way since the turn of the new year, and you cannot think how well they look, and what little trouble there is with them now. Not a drop of water must touch the soil in the pots during this cleaning. If the soil seems too wet in any of the pots we call it "soddened," and we remove as much of it as we can without hurting the roots, and then look to see if the drainage is good. When we find a pot very dry we take it out of the frame, and water it two or three times to make sure a regular moist ball, then let it drain till the last thing in the evening before we put it into the frame. Green slime on a pot is the very worst thing in the world for a nice plant.

NAMES OF PLANTS (*J. R.*, Yorkshire).—Your Fern is *Lastræ dilatata*, and your Orchid a *Maxillaria*, but we cannot make out the species from your dried specimens. There is something wrong at the roots of your Camellias and Epacrises, but it is impossible for us to discern the cause. We are not *clairvoyants*.

THE POULTRY CHRONICLE

POULTRY SHOWS.

CREWE. February 3rd and 4th, 1857. *Secs.* S. Sheppard and J. Margelts, Esqs. Entries close January 15th.

KENDAL. At Kendal, February 6th and 7th, 1857. *Sec.* Mr. J. Atkinson.

LIVERPOOL. January 28th, 29th, and 30th, 1857. *Secs.* Gilbert A. Moss, Esq., and William C. Worrall, Esq., 6, Lower Castle-street. Entries close on the 10th of January.

PRESTON AND NORTH LANCASHIRE. January 21st and 22nd, 1857. *Sec.* Ralph Leigh, Esq., 125, Church Street, Preston. Entries close December 13th.

SOUTH EAST HANTS. At Farcham, January 26th and 27th, 1857. *Sec.* Mr. James James. Entries close January 14th.

N.B.—Secretaries will oblige us by sending early copies of their lists.

CRYSTAL PALACE POULTRY SHOW.

"Où diable la volaille ira-t-elle se nicher?"—**PARAPHRASE.**

"This is the finest thing I ever saw," said a good stalwart specimen of a north countryman. "This is the place for my birds; they are as comfortable as I am."

"Nasty creatures," said an old lady, with a thing between a hat and a bonnet on her head; "I will not come near this place while this crowing lasts."

"This is the *real* Metropolitan Show," said a shrewd-looking cockney; "I will buy some fowls on purpose to show next time."

"The first Poultry Show I ever saw," said a City man. "I will never miss another."

"You see," said a gentlemanly man, pressing the arm of another with whom he was walking, "this is the sort of thing we want. Whatever makes people acquainted with the place is a positive advantage to it."

"To be sure," was the answer; "and we Directors should look to it."

"Astonishing!" said a stout gentleman, one of the old school, *very* old school, for he had a huge gold chain and a bunch of heavy seals dangling at the end of it; "astonishing! Three fowls sold for fifteen guineas! Can't believe it."

"Not the less true," said a bystander. "There are many sold at the price, and hundreds of pounds have been taken for fowls in two days."

"Then, Sir," said the old gentleman, "I give my adhesion to the movement. The public taste is, in the main, a correct one; and although one or two birds may, as articles of fancy, make a ridiculous price, yet when many realise sums which some may consider preposterous, it shows there is a legitimate demand, and the birds only make their value. The principle is, therefore, sound, and I shall now take an interest in it."

Such were many of the remarks to be heard on all sides, and all were laudatory of the undertaking.

Although it is considered the poultry movement is

men in existence long enough for every one to have participated in it in some way or other, yet the truth is that if a show is brought to their doors, as it were, they take no interest in it. This is the case with thousands in London. Their idea of a Poultry Show is associated with a collection of noisy birds ranged in rows, and offering no marks of distinction or merit to other than practised eyes. They have no notion of any other fowls than those to be seen in suburban yards or lanes; but a Show like that we have now to describe dispels the illusion at once. Each breed or dour has its separate class, and the awards of the Judges place the merits of the successful pens so prominently before spectators that they cannot fail to become interested in them. Many other reasons add to their weight. Poultry was unknown in England till very lately. Every one knew new fowls were kept, but they had nothing in common with them. The demand for them and for eggs went on increasing, and our country could not supply it. The French, Belgians, and Dutch were not slow to take advantage of it, and they have for years carried on a very large and lucrative trade with London. We import nearly 150,000,000 eggs annually, and hundreds of thousands of turkeys and fowls.

If Poultry Shows led people to breed birds for which there was no demand, or if the knowledge to be acquired of them was valueless, we should then treat them as an invariable and fleeting weakness; but when it can be proved by commercial statistics that there is a positive need of them, we think everything should be done to encourage the pursuit.

Few things have had so many and such different localities as Poultry Shows. The Zoological Gardens began them. Then our venerable Show, the mother of shows, Birmingham, went on step by step from a loft to a repository, then to a temporary building, and then to the majestic Ingleby Hall. Since then, lecture-rooms, Corn Exchanges, marquee tents, archery-rooms, and even *ci-devant* Royal Training Schools (Brighton) have afforded accommodation for these gatherings. It remained for Sydenham to give them the honour of a temporary palatial *séjour*. With that we have now to do.

It is impossible to imagine a place better fitted for the purpose. It has often been an objection that at these shows there was no resting-place for ladies. Many are physically unable to bear the fatigue of three hours' walking stand down, and they cannot see as much as they would in less time; others become bewildered by the sight of so many birds, and want to recover themselves after an hour's inspection. Some are affected by the crowing. All these requirements are met at the Crystal Palace. In one minute a body may be refreshed by sitting in perfect ease, the eye may dwell on luxuriant verdure, or on statues and other works of art, or it may wander over the landscape and distant hills, to be seen in perfection from the terraces. The eye may be refreshed by the beautiful music to be heard in the transept; and you are brought from London, taken back again, and admitted to all these luxuries for two shillings!

It would seem to be the province of the Crystal Palace Directors to make everything in some way subservient to art, and to familiarise all classes with those combinations of colour and effect which do so much towards inculcating a true and correct taste. Thus the pens were not inside of "eternal white;" they were made to harmonise with the building by being coloured light sky-blue, relieved with white. All those used at the Anerley Shows have been purchased, and the number was completed with some hundreds of those excellent ones registered by Mr. Cooke, Colchester.

Every arrangement was perfect, and the greatest praise due to Mr. Houghton, who ALONE, at a short notice, got it planned and managed the whole. We heartily congratulate him on his success, which was richly deserved.

We will now take a hasty review of the classes, referring our readers for details and distinctions to our number of last week.

The *Spanish* demanded especial mention at the Judges' hands; the chickens were, therefore, pronounced "unusually good," while the single cocks were declared "good." Mr. Davies took the first and second prizes for old birds. Mr. McKie first and Mr. Davies second prize in both the other

classes. We thought well of all, and the number of commendations was great.

The *Dorkings* always seem to be the favourites of nobility, and the present was not an exception. Lady Eleanor Cathcart, Lady Margaret Macdonald, Lady Darnley, Lord R. Grosvenor, and many others, competed successfully, inasmuch as their names appear in the prize-list.

Mr. Botham took the two first prizes in adults, and Mr. Wakefield the first in chickens. Lady E. Cathcart, Rev. E. Donne, Mr. Loder, and the Rev. J. Boys, took all the others. Two well-known names, Mr. Antill and Mrs. H. Fotherby, were first in *White Dorkings*. In the single cock class Mr. Fisher Hobbs took the prize with one of those birds for which he is become proverbial. We cannot speak too highly of these birds, and the increase in weight during the last two years is marvellous.

Then came our old friends the *Cochins*, and the names will be familiar. First, Messrs. Allison and Punchard; second, Messrs. Sturgeon and Roper; third, the Rev. Mr. Hodson and Mr. Peters. The Rev. Mr. Hodson took both first prizes in *Grouse birds*. The first prize *White chickens* were very good, and Mr. Crane's bird in Class 15 was worthy of the best days. His shape and perfect symmetry might be advantageously studied by breeders. As a whole, and speaking as impartial chroniclers, we are bound to say that, with the exception of some of the prize birds, the *Cochins* were not equal to the classes lately seen at our great shows.

The *Brahmas* showed well and sold well. All the old names will be seen among the prize-takers—Botham, Pomeroy, Allison, Chater, coupled with a new one, Mr. Bush, of Poland celebrity.

The *Game cock* is certainly an English bird. He is admired and liked. Those who are fond of comparison must endeavour to find the reason, and to ascertain what there is in common between this bird and his breeders and admirers. Perhaps it is his bold and upright bearing, and his indomitable pluck. To enumerate all who deserve mention here would be to fill a sheet—they are fifty-one in number. Every class was a good one, and all the best names will be found. If we were pressed to designate the best classes, we would say, the *Black Game*, *Red Game*, and the *Dorkings*. The Judges declared them "good," "very good," and "unusually good." Messrs. W. Cox and J. W. Monsey, Monsey, and Buncombe, Mr. Sewell and the Baron Rothschild, gained their honours fairly, and may be proud of them.

The *Golden-pencilled Hamburgs* are decidedly better than the *Silver*, and the prizes fell to well-known, though not frequent exhibitors, Messrs. Howard and Clayton. An idea of the class may be formed when we say that Mr. Crane was only among the commendations. It would almost be advisable to "set up" in type that Mr. Archer took the first prize in *Silver-pencilled*. Mr. Botham took it in chickens. Mrs. Roper and Mr. Bennett showed good birds.

The *Gold-spangled* were good. Mr. Coopers took second in both classes, but was beaten for the first by Messrs. Broadhead and Hugo.

Classes 34 and 35 introduced us to the *Silver-spangled Hamburgs*, and here there was one pen of unusual merit—first prize chickens, 728. Here were the tails amateurs dream of—perfectly white, and accurately tipped with black, white ear-lobes, dark hackles, beautifully-mooned bodies and breasts. If their age bears out the promise of their youth they will have a long career of success. Mr. Adkins was the owner of the best *Hamburg cock*; the Rev. T. L. Fellowes second best. Mr. Baiter was successful in both classes of *Black Polish*. These birds were not equal to those we saw at Birmingham.

Among the old *Golden Polish* Mr. Bush was obliged to be content with the second place, owing to the condition of his birds. In chickens he was also beaten by Mr. Coleridge. He, however, took three prizes out of six. Mr. Coleridge did the same in *Silver Polish*, beaten only by two of the most beautiful hens we ever saw, the property of Mr. Tossell. Mr. Adkins took both third prizes. He also took the first prize for single cocks.

It is often our duty to speak but lightly of the *Wagtails* on this occasion, however, we will only repeat what the Judges said—"One of the best classes ever shown." The general remark of the uninitiated was that Mr. Ayer took

like Skye terriers, were handsome just in proportion to their ugliness. We have never seen so many good birds of this breed in one class before.

The various class produced many good birds. Mr. Coleridge's *White Polands* were beautiful. *Andalusians*, *Crève Cœurs*, *Sultans*, *Runkins*, all had their representatives.

The *Gold Sebright Bantams* were better than the Silver. The Blacks and Whites were excellent. But perhaps one of the best displays ever seen for variety in Bantams was in the extra class. Two pens of Duckwings; Black-breasted Game of perfect beauty; and a singular pen of Blues, the first we have seen, contributed to it.

The *White Geese* were not so heavy as their Grey competitors, yet the successful pens weighed 62½ lbs., 61 lbs., and 60 lbs. The Grey weighed 68 lbs., 61 lbs., and 58 lbs. The heaviest were Mr. Davies's celebrated birds, and they were here claimed.

The *Aylesbury Ducks* were very good, and Mr. Ford took his old place at the head; his three birds weighed 25 lbs.; the second prize weighed 24 lbs. What a change in a few years! Then a Duck was called immense if it weighed 5 lbs.; now three weighing 7 lbs. each get only a high commendation. The *Rouen Ducks* were very perfect, but they lacked weight, and the various class showed numbers of beautiful *Buenos Ayres* and *Call Ducks*.

Mr. Fairlie and the Rev. T. L. Fellowes took five out of six prizes in *Turkeys* with heavy birds.

Messrs. Andrews, Baily, and Hewitt were the Judges.

The attendance throughout was excellent, and it is calculated 20,000 people visited the Show during the four days. The sales amounted to upwards of £600, and large prizes were given. Mr. Wakefield's Dorkings, £25. The Rev. S. Donne's, £15 15s. The first prize single Game cock, £10 10s. Several pens of Hamburgs at £10 10s. the pen. A pen of Polands, £25. A pen of Ducks, £26. A pen of Geese, £20. All proved the desire to possess good birds, and the interest this delightful pursuit excites amongst all classes of the community.

It is a great pleasure to add that the Show was every way successful, and that this is only the first of many such gatherings.

NOTTINGHAM CENTRAL POULTRY EXHIBITION.

THE spirited projectors of this newly-appointed Poultry Association held their first annual Meeting in the Mechanics' Hall, Nottingham, on the 13th, 14th, and 15th of the present month. It proved a very successful one, and called together an extraordinary attendance of the surrounding nobility, together with great numbers of amateurs from the most distant counties of England, independently of an extensive native population. Very considerable fears were entertained at the onset, that the simultaneous Meeting of the Crystal Palace Company would equally affect both the number of entries of poultry for competition, and also place an unfavourable limit on the amount of admission monies; but certainly we ourselves never witnessed a more happy illustration of the verity of the old axiom, "Out of evil good abounds." That the Crystal Palace regulations did bear heavily upon the aggregate number of pens at Nottingham none can gainsay; but, at the same time, the Committee might well congratulate themselves it proved so; for, without this unforeseen restriction, it would have been altogether impossible for them to have accommodated nearly the numbers of poultry for which originally applications had been actually made. As matters eventually stood, however, the Hall was filled to repletion, comprising, of poultry alone, nearly 500 pens, combined with half that number of pens of pigeons, 17 entries of rabbits, and the very unique addition of no less than 170 cages of canaries. The latter we will at once dispose of by stating that the *variety* of plumage and conformation displayed in the various classes was surprising. In many instances the gorgeous lustre and amount of colour in the birds were far beyond anything of which we ourselves had considered canaries capable. They approached very closely to the beauty of some of the preserved skins of foreign birds we occasionally see displayed for sale to the attention of naturalists, and retaining but little of the general

appearances that we are accustomed to view in these happy and truly contented songsters. The rivalry they evinced as to song was especially interesting. Loud and long did they emulate each other, and their unceasing powers caused many fanciers to remain for a greater portion of the day reviewing them. This part of the Exhibition certainly proved attractive, even to a degree beyond the expectation of the most sanguine. Of *rabbits* there were some most extraordinary specimens; but, although excellent of their kind, they had but few admirers.

We must now allude more particularly to the ostensible objects of the Committee, viz., as the *Poultry Show*. The fowls were all exhibited in the pens commonly known as Greening's Exhibition pens. They had been carefully screened from each other by blinds of glazed green calico. The pens thus arranged presented to the eye of an inexperienced amateur all that could by possibility be devised for comfort, general safety, and accommodation; but it is undoubtedly "not all gold that glitters," and the sequel proved that such "screens" are at the very best altogether worthless and ineffectual. There is scarcely any amateur who is not fully aware how strangely "infectious" the slightest *mêlée* becomes if it transpires within ear-shot of truly well-bred Game fowls. At such times even the hens become, if possible, more intemperate and indomitable than their male companions, and all round speedily partakes of every essential of an Irish row. It is impossible for those who may not themselves have actually witnessed such a scene to appreciate the downright impracticability of restoring order and quietude, the fight still continuing wholesale, until numbers are altogether incapacitated from farther resistance. Nothing can be more sanguinary and vexatious than such outbreaks, yet more productive of certain pecuniary loss to the owners, when they unfortunately take place within the confines of a Poultry Exhibition. The supposed protection of intervening open wirework only increases the difficulty, as in such a case, after seizing one another by the head or neck, the combatants, in their vain attempts to strike each other, press against the barrier, which, acting as a fulcrum, the severance of at least a portion of flesh from one or the other is unavoidable. From this cause several Game and other fowls were placed in a position the very "reverse of winning" at the Nottingham Central Poultry Show, and there is but little doubt it will be some time before they will altogether recover the effects of such maltreatment. We are most happy, however, to inform our readers that, at future meetings of this Society, the possibility of a recurrence of such a mishap will be most amply provided against.

As to the Committee themselves, as a "first attempt" their efforts were both praiseworthy and untiring; they personally endured the amount of actual manual labour a Poultry Show ever involves with good humour, willingness, and self-denial. Experience will suggest some few other improvements in coming years. The Mechanics' Hall affords every needful accommodation for a small show, being well provided with light from both the side walls; it is also very well ventilated.

The *Spanish* were good, and "white faces" all but universal. There appears to us quite an oversight, however, with many exhibitors, as to the vital necessity of *straight* combs in the male specimens. Many of the Nottingham *Spanish*, although in face faultless, certainly possessed the most drooping combs we ever witnessed anywhere. The show of *Dorkings*, more especially the Grey ones, was a most creditable triumph for Nottinghamshire. It has, indeed, very rarely fallen to our lot to witness so universally weighty and excellent a collection. There has not as yet, in 1857, been any exhibition that could equal them. The *Game* were worthy of this cock-fighting locality; but, as before said, we were much grieved to witness several of the most worthy specimens deprived of all chance of present success by the recent indulgence of their characteristic pugnacity. The *Malays* mustered very strongly and well. It is self-evident that considerable public attention is now drawn to this latterly neglected variety. The *Cochins* manifested improvement: a pen of PERFECTLY black ones were deservedly awarded the chief premium in this class. Of the *Hamburgs* we can barely speak too highly. They were

almost universally executed. Golden-spangled particularly. The *Water-fowls* of all kinds were very superior. The *Turkeys* were likewise of immense size; but, being entered at low prices, many were the ownership. In the extra stock were exhibited a number of most highly-conditioned *Japan Pea-fowls*. The extraordinary plumage of these birds is very prepossessing, as was proved by visitors constantly evinced, nor do we at the moment remember ever to have seen any such being thus publicly exhibited. They received an *extra* premium of ten shillings and were, perhaps, one of the greatest public attractions of the whole Show.

It is but justice to record the attention that was carried out to all poultry entrusted to the Nottingham Central Committee, for not only was food of all kinds liberally supplied, but in all cases of infectious diseases the specimens so affected were instantaneously removed. We hear, too, that most efficient arrangements were entered into for the immediate return of every basket at the final close of the Exhibition.

Mr. George Andrews, of Doncaster, being unavoidably prevented attending as one of the poultry arbitrators, the whole duty was efficiently and conditionally fulfilled by the party previously appointed as the colleague of that gentleman, viz., Mr. Edward Hewitt, Eden Cottage, Spark Brook, Birmingham, and that without entailing any delay whatever in the time of opening to the public admission.

In all the classes birds of all kinds were competed.

SPANISH.—First, Mr. J. R. Rodbard, Aldwick Court, Langford, near Bristol. Second, Mr. M. Ridgway, Dewbury. Third, J. Wright, Esq., Hulland Hall, Ashbourne. Highly Commended, Mr. J. Kilvert Bartrum, 6, Richmond Hill, Bath; Miss Mary Arriott, Floore, near Weedon; Mr. J. F. Dixon, Cotgrave, Nottinghamshire. Commended, the Right Hon. the Countess of Chesterfield, Brey Hall, Burton-upon-Trent; Mr. W. Appleby, Station Street, Burton-upon-Trent; Mrs. Parkinson, Knaphorpe, Southwell, Notts.; Mr. C. Titterton, Birmingham; Mr. S. Sneap, South Collingham, Notts.; Mr. J. Hopkins, Higford, near Shiffnal, Salop. (A very good class.)

DORKING (Coloured).—First and Second, Mrs. H. Smith, The Grove, Cropwell Butler, near Bingham, Notts. Third, J. Hitchman, Esq., M.D., Mickleover, Derby. Highly Commended, His Grace the Duke of Rutland, Belvoir Castle, Grantham; J. D. Henson, Esq., M.D., Cotton Hill, Stafford; Mr. R. S. Beecher, Burton-upon-Trent; Mrs. Parkinson, Maplethorpe, Southwell, Nottinghamshire; Miss E. S. Perkins, Sutton Colefield; Mr. J. Robinson, Vale House, near Garstang. Commended, Mr. W. H. Malpas, Nottingham; H. Townsend, Esq., Rolleston, Burton-upon-Trent; Mr. J. Robinson, Vale House, near Garstang. (One of the best classes of Dorkings yet exhibited.)

DORKINGS (White).—First, Mr. J. Robson, Vale House, near Garstang. Second, Mr. S. Burn, East Terrace, Whitby, Yorkshire. Third, F. J. Coleridge, Esq., Manor House, Gory St. Mary, Devon. Highly Commended, Mr. J. Camm, Farnsfield, Southwell, Notts.

GAME (White and Piles).—First, Mr. Camm, Farnsfield, Southwell, Notts. Second, J. T. Edge, Esq., Strelley, Notts. Third, Mr. J. Morley, Hose, near Melton Mowbray, Leicestershire. Commended, Mr. W. Hould, Hose, Melton Mowbray.

GAME (Black-breasted and other Red).—First, Mr. J. R. Rodbard, Aldwick Court, Langford, near Bristol. Second, Mr. H. Marshall, Cotgrave, Nottinghamshire. Third, Mr. A. Mellors, sen., Carburton, Ollerton. Highly Commended, J. T. Eds, Esq., Strelley, Nottinghamshire; Mr. J. Killingley, Burton-upon-Trent; W. Cox, Esq., Brailsford Hall, Derby; Mr. S. Field, Oxtan, Southwell; the Rev. C. Hudson, Saundby Rectory, Retford. Commended, Mr. T. Hould, Hose, Melton Mowbray, Leicestershire; Mr. W. Dawn, Selly Oak, Birmingham; Mr. W. Mellors, jun., Papplewick, Nottinghamshire; Mr. W. H. Swann, Farnsfield, Southwell, Notts.; Messrs. Black and Rapson, 16, Upper Parade, Leamington. (A first-rate class.)

GAME (Duckwings and other Greys and Blues).—First, J. Wright, Esq., Hulland Hall, Ashbourne. Second, Messrs. Bullock and Rapson. Third, Mr. W. R. Lane, Bristol Road, Birmingham.

GAME (Black and Brassy Wing, except Greys).—First, J. Wright, Esq., Hulland Hall, Ashbourne. Second, Mr. F. Leedham, Burton-upon-Trent. Third prize withheld.

BRAHMA POOTRA.—Second, the Right Hon. the Countess of Chesterfield, Brey Hall, Burton-upon-Trent. First and Third prizes withheld.

HAMBURGS (Golden-pencilled).—First, Mr. W. H. Swann, Farnsfield, Nottinghamshire. Second, Mr. W. Sanday, Holme Pierrepont, Notts. Third, Mr. J. K. Bartrum, 6, Richmond Hill, Bath. Commended, Mr. J. Oldham, Long Eaton, near Derby; Mr. M. Smedley, Clouds Cottage, Stapleford, near Nottingham; Mr. G. Daft, Halloughton, Southwell.

HAMBURGS (Silver-pencilled).—First, Mr. G. Kirkland, Southwell, Notts. Second, Mr. E. Cope, Edingy, near Southwell. Third, Messrs. Bird and Beldon, Eccleshill Moor, Bradford. Highly Commended, W. Cox, Esq., Brailsford Hall, Derby.

HAMBURGS (Golden-spangled).—First, Mr. J. K. Bartrum, Richmond Hill, Bath. Second, Mr. W. H. Swann, Farnsfield, Southwell, Notts. Third, Rev. J. C. Raw, Aunderby Carage, Northallerton. Commended, Mr. W. Sanday, Holme Pierrepont, Notts.; the Rev. T. G. Beaumont, Bridgeford Hill, Notts.

HAMBURGS (Silver-spangled).—First, Mr. J. K. Bartrum, Richmond

Hill, Bath. Second, W. Cox, Esq., Brailsford Hall, Derby. Third, Mr. J. Mitchell, Park Lane, Heighley, Yorkshire.

MALAY.—First and Second, Mr. J. W. George, Beeston Padge, Notts. Third, Mr. G. W. Boothby, Holme Cottage, Louth. (The class unusually good.)

COCHIN-CHINAS (Buff).—First, Mr. C. R. Titterton, Birmingham. Second, Mr. W. H. Malpas, Nottingham. Third, Mr. J. Robinson, Vale House, near Garstang.

COCHIN-CHINAS (Brown, Partridge, or Grouse).—First, Mr. C. Calvert, Southwell, Notts. Second, Mr. W. Morris, Cotgrave, Notts. Third, Mr. J. R. Rodbard, Aldwick Court, Langford, near Bristol.

COCHIN-CHINAS (White or Black).—First, Mr. J. E. Mapplebeck, Highfield House, Mosely Road, Birmingham. Second, Mr. R. Chase, Mosely Road, Birmingham. Third, Mr. J. R. Rodbard, Aldwick Court, Langford, Bristol.

POLANDS (Black with White Crests).—Second, Mr. W. Dawson, Selly Oak, Birmingham. First and Third prizes not awarded.

POLANDS (Golden-spangled).—First, Rev. S. K. Hole, Cauntton Manor, Newark. Second, Mr. J. Hopkins, Higford, near Shiffnal, Salop. Third, Mr. G. W. Boothby, Holme Cottage, Louth, Lincolnshire.

POLANDS (Silver-spangled).—First, Mr. J. Hill, Selly Oak, near Birmingham. Second, Miss Cannan, Springfield House, Bradford, Yorkshire. Third, Mr. J. Hopkins, Higford, near Shiffnal, Salop. Highly Commended, Mr. W. Dawson, Selly Oak, Birmingham. (A very superior class.)

FOR ANY OTHER DISTINCT VARIETY.—First, Miss Fanny Hurt, Rock House, Matlock (White Silky). Second, Miss E. S. Perkins, Sutton Colefield (Game Bantams). Third, Mr. J. Smith, Henley-in-Harden (Andalusian). Highly Commended, Mr. C. Coles, Fareham, Hants. (Andalusian). Commended, A. Haffenden, Esq., Langford Hall, near Newark (Persian or Rumpless); Mr. J. Faulkner, Brethly, Burton-upon-Trent (Cuckoo); Mr. W. B. Tegetmeier, Tottenham, London (Crested Rumpless).

BANTAMS (Gold-laced).—First, Miss E. S. Perkins, Sutton Colefield. Second, Mr. T. Evinson, Chesterfield. Highly Commended, Mr. F. Blagg, South Levington, East Retford. Commended, Mr. R. Curzon, 3, Full Street, Derby.

BANTAMS (Silver-laced).—First, Mr. A. Clarke, Bath Terrace, Sneinton, Notts. Second, Mr. J. Bradwell, Southwell, Notts. Highly Commended, Mr. F. Blagg, South Levington, East Retford. Commended, Mr. W. Dawson, Hopton Mirfield, Yorkshire.

BANTAMS (Black).—First, Mr. R. Hawksley, jun., Southwell, Notts. Second, Mr. M. Ridgway, Dewsbury. Highly Commended, Mr. P. W. Brown, Bull Bridge, Belper, Derbyshire.

BANTAMS (White).—First, Mr. J. E. Mapplebeck, Highfield House, Mosely Road, Birmingham. Second, Messrs. Bird and Beldon, Eccleshill Moor, Bradford.

DUCKS (White Aylesbury).—First, Mr. J. R. Rodbard, Aldwick Court, Langford, near Bristol. Second, Mr. W. Cheadle, Dunham-on-Trent, near Newark. Highly Commended, Mr. J. Brown, Old Moot Hall, Notts.; J. Camm, Farnsfield, Southwell, Notts.; Mr. J. Robinson, Vale House, near Garstang. Commended, Mr. T. M. Keyworth, Cottesford-place, Lincoln. (The class superior.)

DUCKS (Rouen).—First, Mr. G. Daft, Halloughton, Southwell, Notts. Second, Mr. T. W. Pearse, Bromham Road, Bedford.

DUCKS (any other variety).—First, Miss E. S. Perkins, Sutton Colefield. (East Indian, or Buenos Ayres.) Second, A. Haffenden, Esq., Langford Hall, near Newark. (White Call.) Commended, Mr. G. Daft, Halloughton, Southwell, Notts.

GEESE.—First, Mr. G. Daft, Halloughton, Southwell. (White.) Second, J. S. Sherwin, Esq., Bramcote Hills, Notts. Highly Commended, Mr. W. S. Smith, Eastwood, near Nottingham.

TURKEYS.—First, His Grace the Duke of Rutland, Belvoir Castle, near Grantham. Second, Mr. G. Daft, Halloughton, Southwell. (Cambridgeshire.) Highly Commended, the Right Hon. the Countess of Chesterfield, Brey Hall, Burton-upon-Trent. (Dark Turkeys.)

CLASSES FOR SINGLE COCKS.—*Spanish.*—Prize, Mr. J. R. Rodbard, Aldwick Court, Langford, near Bristol. Highly Commended, Mr. J. F. Dixon, Cotgrave, Notts. Commended, Mr. R. J. Peel, Burton-upon-Trent.

Dorking.—Prize, Mr. S. Burn, 1, East Terrace, Whitby, Yorkshire. Highly Commended, Rev. T. O. Bridgeman, Blynhill Rectory, Shiffnal; Mr. R. Bunting, Hognaston, Ashbourne; J. S. Sherwin, Esq., Bramcote Hills, Notts.; H. Smith, Esq., The Grove, Cropwell Butler, near Bingham, Notts. Commended, the Right Hon. the Countess of Chesterfield, Brey Hall, Burton-upon-Trent; Mr. W. H. Swann, Farnsfield, Notts. (A very good class.)

Cochin-China.—Prize, Mr. J. Staley, North Collingham, Newark, Notts. Commended, Mr. R. S. Beecher, Burton-upon-Trent.

Brahma Pootra.—Prize, Mr. R. S. Beecher, Burton-upon-Trent. *Pencilled Hamburg.*—Prize, Mr. W. H. Swann, Farnsfield, Notts. Highly Commended, Mr. W. Sanday, Holme Pierrepont, Notts.

Commended, Mr. E. Smith, Radcliffe-on-Trent, Notts. (Gold.) (A superior class.) *Spungled Hamburg.*—Prize, Mr. G. Daft, Halloughton, Southwell. Highly Commended, Mr. W. H. Malpas, Nottingham; Mr. W. H. Swann, Farnsfield, Notts. Commended, Mr. R. Cross, Cippenham Farm, Slough, Bucks. (The whole class very good.)

GAME (White and Piles).—Prize, Mr. J. Camm, Farnsfield, Notts. Commended, Mr. J. Killingley, Burton-upon-Trent; Mr. R. Perry, Kirklington, Southwell, Notts.

GAME (Black-breasted and other Reds).—Prize, Mr. W. Mellors, Carburton, Ollerton. Commended, Mr. S. Field, Oxtan, Southwell, Notts.; Mr. H. Marshall, Cotgrave, Notts.

GAME (Duckwings and other Greys).—Prize, J. Wright, Esq., Hulland Hall, Ashbourne. Commended, Mr. T. Evinson, Chesterfield. (Birch Cock.) **GAME (Black and Brassy-winged, except Greys).**—Prize, Mr. C. Newbound, East Bridgeford, Notts. (Brassy.)

EXTRA STOCK.—Prize, Mr. T. Worthington, Hartshorne, near Burton-upon-Trent. (Japan Pea Fowls.)

We will publish the lists of Pigeon and Canary Prizes next week.

THE PECULIARITIES IN THE SKULLS OF
CRESTED FOWLS.

SOME short time since I was honoured by a request from Mr. Mitchell, the Secretary of the Zoological Society, to bring before the members, at one of their scientific meetings, the specimens that I had made to illustrate the very extraordinary structure in the skull and brain of the different varieties of feather-crested fowls. Thinking that a more popular account of my paper than the semi-official notice in the *Athenæum* might be interesting to the readers of THE COTTAGE GARDENER, I am induced to forward the following abstract:—

In the fowls known generally as Polish the bone of the forehead, instead of being flat as in the Spanish, or slightly arched as in the Cochin, is swollen out into a large globe-shaped protuberance, which, however, is not entirely formed of bone, but consists, in great part, of a fibrous membrane. This globular swelling contains by far the larger portion of the brain of the fowl, and as it communicates with the cavity of the skull by a very narrow passage, through which the brain passes, the latter is necessarily of the shape of an hour-glass (rather a puzzling fact for the phrenologists). This remarkable structure exists even before birth, and gives rise to the extraordinary appearance that well-bred Polish chickens present on emerging from the shell. It is found in an equal degree in both the cocks and the hens, and is present in all varieties of fowl that have a largely-developed crest; in fact, the development of the globular swelling and the size of the crest are intimately dependent on each other, it being impossible to have a good crest on a flat-headed bird, a point that should be borne in mind by the Polish breeder, as by it he is enabled to select those chickens that are likely to reward his care, even at a very early period of their lives.

The different breeds in which I have observed this wonderful structure are the White-crested Black, the Golden and Silver-spangled, both bearded and beardless, and the White. I should, however, state that there are differences in the skulls of the first-named, proving them to be a distinct breed from the Spangled and White birds. The Sultan fowls, or Feather-legged White Polish, have also the protuberance well developed; but in the so-called Ptarmigans, which are evidently only bad and deteriorated specimens of the same breed, the head is flat. In the Rumpless White Polish which I have exhibited, the crest, and consequently the protuberance, are well developed.

No person can have paid any attention to Polish fowls without observing the peculiar nostrils characteristic of the breed. This peculiarity arises from the absence of the bones which in other fowls form the bridge of the nose, and the place of which in Polish is supplied by cartilage or gristle.

The peculiar shape of the brain in Polish would lead most persons to anticipate some alteration in their intellectual character from that of fowls in general; but this does not appear to be the case. They are, as far as my observation extends, neither more nor less intelligent than other poultry. It is true they are not sitters; but neither are the Pencilled and Spangled fowls, that have skulls of the ordinary construction. Sometimes they will hatch, as happened to a White Polish hen that was formerly in my possession, and that was one of the best crested hens I ever saw.

This remarkable structure was, as far as I am aware, first noticed by the old anatomist Peter Borelli, two hundred years since, in 1656; it was also described by Pallas, and later by the celebrated Blumenbach, who gave some drawings of the skulls in a rare Latin tract on "Extraordinary Formations." But the facts appear to have escaped notice until recently, for in the Museum of the College of Surgeons is a skull, in which the formation is attributed to disease. More recently, R. P. Williams, Esq., of Dublin, observed the facts, without knowing they had been previously described. Dr. Horner, also, made some observations which were independent of prior investigations. I also made the same discovery; but all question as to who was the original discoverer was settled when I found that old Peter had outwitted us six generations ago. Truly, these ancients were terrible fellows at robbing us of our ideas.—W. B. TEGETMEIER.

Since writing the above a circumstance has occurred that strikingly illustrates the small amount of protection that the brain of the Polish receives from the membrane which, as I have stated, forms so large a part of the frontal protuberance. One of the Polish cocks that took a prize at the last Birmingham Show escaped from his run, and had a tilt with a Spanish cockerel. In the very first rise he was struck on the head by the young cock, the brain was injured, and his late owner now laments his loss.—W. B. T.

OUR LETTER BOX.

RABBIT HUTCHES.—"I wish to ask your opinion of a plan I have thought of for removing the possibility of unpleasant smells, and of all the concomitant evils connected therewith, but being only a young breeder of the animal, I should prefer the opinion of more experienced persons than myself before trying it. My hutches are built on the precise plan recommended in THE COTTAGE GARDENER of last week, being three feet six inches long and two feet deep. I propose now, in place of the nailed bottom, to have fitted a drawer of about four inches in depth to pull in and out from the front, and to keep this full of dry sand for the bottom of the hutch, renewing the sand entirely about once a fortnight. This, I think, would prevent the possibility of the wood becoming saturated with urine, and, consequently, smelling offensive."—J. N.

[It is a very good plan, but we should use sawdust or chaff, and then it would form a very rich manure.—Ed. C. G.]

LONDON MARKETS.—JANUARY 19TH.

COVENT GARDEN.

In addition to our last week's report, we have now to notice the first arrival of some good *French Lettuce*, *Endive*, *Globe Artichokes*, and *Barbe de Capucin*, which we shall receive regularly three or four times a week, weather permitting. There has been, also, some good *Cornish Broccoli* sent up this week, varying in price from 3s. to 5s. per dozen, a most useful article at this season. Forced vegetables comprise *French Beans*, *Cucumbers*, *Sea-kale*, and *Rhubarb*. The *Potato* trade remains much the same.

POULTRY.

There has been little poultry at market since Christmas, and prices have risen in proportion; but senders must not reckon upon its duration, as it is probably only temporary.

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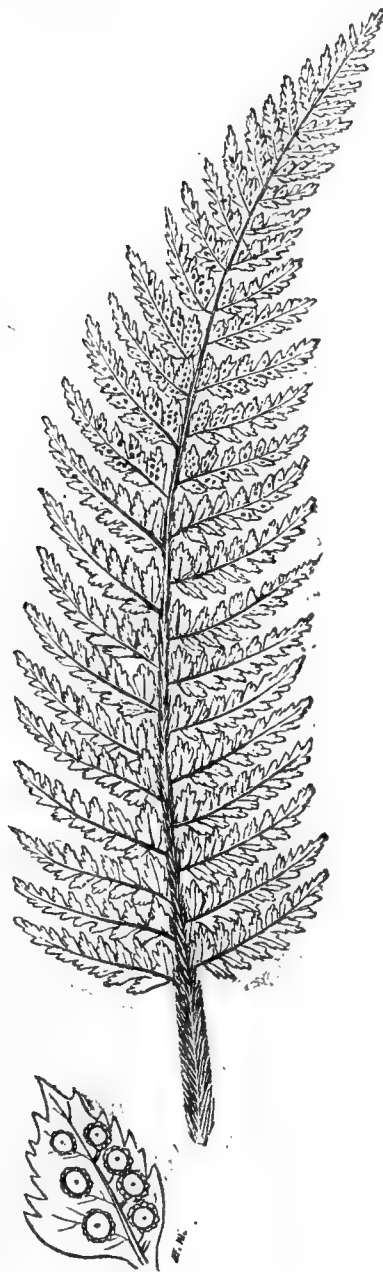
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WEEKLY CALENDAR

D M	D W	JAN. 27—FEB. 2, 1857.	WEATHER NEAR LONDON IN 1856.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
27	Tu		29.811—29.636	47—20	N.W.	02	48 a. 7	38 a. 4	6 34	2	13 6	27
28	W	Formica rufa.	29.737—29.621	42—24	S.W.	08	47	40	8 1	3	13 18	28
29	Th	Apis mellifica.	29.696—29.694	38—19	N.W.	—	45	42	9 26	4	13 29	29
30	F	Culex pipiens.	30.031—29.730	38—21	N.W.	—	44	44	10 52	5	13 38	30
31	S	Hilary Term ends.	30.179—30.075	37—19	N.W.	—	42	45	morn.	6	13 47	31
1	SUN	4 SUNDAY AFTER EPIPHANY.	30.136—30.051	38—29	W.	—	VII	IV	0 m. 18	7	13 55	32
2	M	Hare's-tail Rush (Eriophor).	30.001—29.908	38—28	W.	—	39	49	1 47	8	14 3	33

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 44.0°, and 31.4°, respectively. The greatest heat, 57°, occurred on the 1st, in 1852; and the lowest cold, 13°, on the 2nd, in 1831. During the period 102 days were fine, and on 92 rain fell.

POLYSTICHUM LOBATUM.



THIS is considered by some botanists merely as a variety of *Polystichum aculeatum*, but from Ray downwards it has been admitted as a distinct species by many authorities. Ray in his *Synopsis Stirpium Britannicarum* describes it as *Filix aculeata major, pinnulis auriculatis crebrioribus, foliis integris angustioribus* (larger prickly Fern, with closer and eared leaflets, and with the whole fronds narrower). Sir J. E. Smith, after quoting this description, adds, "Ray has well marked the differences between *P. aculeatum* and *P. lobatum*." Mr.

Francis sums up the distinctions very effectively as follows:—

"This species is distinguished from *aculeatum*, for which alone it can be taken, by the decurrent lobes; and as Sir J. E. Smith very rightly observes, 'by the much shorter, more crowded, and less scaly pinnae (leaflets).' Added to which the pinnules (leaflets) are more entire, being but slightly eared, very convex, thick, and of a glaucous colour, furnished with a less number of, and smaller, bristly serratures, sometimes wanting them entirely at the sides. The sori also are more confined to the top of the leaf, and larger than in *aculeatum*. The variety *lonchitidoides* is not very scaly, and in form and size exactly intermediate between this species and *lonchitis*."

It is the *Polypodium lobatum* of Hudson, and the *Polypodium lonchitidoides* of some other botanists. In English it was called by Ray *Prickly Male Fern with narrower leaves*, and by others *Close-leaved Prickly Shield Fern*.

Main root large, tufted. Fronds evergreen, produced in a circle, from one foot to two feet high, stiff, narrow spear-head shaped in their general outline, milky green in colour, and surface very shining. Stem strong, very scaly, and leafleted almost to the base. Leaflets alternate, short, very gradually decreasing in length as they approach the top of the stem, curved upwards; so close together near the bottom of the stem as to overlap each other. Leaflets pointed egg-shaped, at their base running much into each other; slightly saw-toothed; only the larger ones eared, and that but slightly; that next the stem, on the upper side of the leaflet, so broad as to overlap that next to it, and so long as to partly cover the under leaflet on the leaflet next above it. Fructification only at the top of the frond; the masses somewhat irregular in size, borne by the lowest branch of the side-veins, circular, with a cover depressed in the centre.

It is found on shady hedge-banks, and is more common than *P. aculeatum*, which is some evidence that it is not a variety of that species.

We extract from Mr. Francis's "Analysis of British Ferns" the following list of the places where it is found:—

"Extremely common in Scotland and in the north of England, gradually losing itself towards the south, and becoming more and more intermingled with *aculeatum*, which in its turn is superseded still more southerly by *angulare*. In the middle and south of England its recorded habitats are Leicestershire; common about Settle, Yorkshire; Pottery Car, near Doncaster; Matlock, Derbyshire; at Studley, Sambourne, Overley, and Weatherly, Warwickshire; Lane leading to the Vachè from Chalfont, Bucks; near Bristol; near Dorking, Surrey; in Hants, &c.; near Yarmouth; Sussex and S. Kent. Wales—near Wrexham, Den-

highshire. *Ireland*—Colin Glen, near Belfast; Hermitage, County Wicklow; County of Derry. Glen Fee, Clova Mountains; Braid Woods, near Edinburgh."

It is even harder than *P. aculeatum* and *P. angulare*, and may be cultivated like them in every particular.

THE first Meeting of the ENTOMOLOGICAL SOCIETY during the present year was held on the 5th of January, the chair being occupied by W. Wilson Saunders, Esq., F.R.S., President.

Amongst the books upon the table presented to the Society since the last Meeting were continuations of Mr. Neitner's descriptions of minute species of *Beetles* captured by himself in Ceylon, and of which the description had first appeared in the newspapers of that island, and a few copies had subsequently been printed separately for distribution.

The Rev. D. J. Drakeford, M.A., of Chewton, Mendip, Somersetshire, and H. S. Digby, Esq., of Fenstanton, Hunts, were elected members; and E. W. Robinson, Esq., a subscriber to the Society.

Mr. Stevens exhibited a considerable number of new and interesting Lepidoptera, chiefly Moths belonging to the family *Pyralidæ*, recently taken by Mr. Wallace at Sarawak, in Borneo. Among the species was a beautiful grass Moth allied to *Cerura liturata*, of India; a singular Bombyx, allied to the Javanese *Megasoma pardale*, and several *Pyralides*, with the palpi enormously developed and thrown over the back, extending backwards to the extremity of the abdomen.

Mr. Hunter exhibited, on behalf of Mr. Reading, of Plymouth, four living specimens of the rare *Carabus intricatus*, taken in damp moss in the neighbourhood of that place, being the old habitat recorded long ago by Dr. Leach, the authenticity of which had been doubted, in consequence of no subsequent specimen having been found there, although repeatedly searched for. Mr. F. Smith had received a specimen from Hawley Flat, near Blackwater, Hants, as recorded in *The Entomological Magazine* for 1837. He also had repeatedly searched that locality since that time, but without success. It appeared, however, now that the precise habits of the species were known, that the want of success had originated in consequence of collectors not searching in the right place, namely, the damp moss at the roots of trees during the winter, instead of beneath stones in more open places in May and June.

Mr. Reading also sent for exhibition a specimen of the *Glæa erythrocephala*, a Moth belonging to the family Noctuidæ, of which only a single British specimen had hitherto been captured. It was taken upon Ivy blossoms in November last.

Mr. Stevens also exhibited a new and very beautiful Butterfly belonging to the genus *Callithea*, taken by M. De Gand in Peru, and allied to the *Callithea Batesii* of Hewitson. The outer margin of the fore wings and the whole of the hind wings is rich blue, the former having a large bright crimson spot at the base, extend-

ing nearly to the anal angle. He also exhibited a remarkable Curculio from Burmah, allied to the genus *Pachymerus*, with singularly-formed hind legs.

Mr. Vernon Wollaston read a memoir upon the British species of the genus *Atomaria*, a group of Beetles of minute size, as indicated by their generic name, and of which he described twenty-four distinct species as natives of this country. He also exhibited a box of minute Coleoptera, beautifully set out upon card, being a portion of his capture during his last visit to Madeira.

Mr. Lubbock called attention to a remarkable memoir lately published by Professor Von Siebold, entitled *Wahre Parthenogenesis bei Schmetterlinge und bienen*, containing some extraordinary theories on the generation of Bees and other Insects, considered with reference to the Parthenogenetic theory of the Aphides, or Plant Lice, proposed by Professor Owen. An English translation of Von Siebold's paper will shortly be published.

A letter addressed by Mr. W. Marshall to Mr. Monteth on the reputed capture of six specimens of the Bath White Butterfly (*Pieris Daphidice*), near Glasgow, was read, as well as a paper by Mr. Pascoe, containing descriptions of new exotic species of *Longicorn Beetles*, chiefly from Borneo, recently transmitted to this country by Mr. Wallace.

WE are well pleased to announce the safe return from India of MR. FORTUNE. He has been superintending the formation of vast plantations of the Tea plant in the Himalayas. We hope to have the pleasure of perusing another volume from his pen relative to his researches in China and India. Such a volume just now would be doubly interesting.

EXOTIC NURSERY, KING'S ROAD, LONDON.

(Continued from page 234.)

AQUARIUM.—This is the name of a large house, which is thirty-five and a half feet long by twenty-eight and a half feet wide, with a tank (aquarium) thirty by twenty-two feet, having an average depth of eighteen inches of water for growing Water-Lilies and other aquatic plants in a moist stove heat. Besides the actual water-plants, this house contains a great number of other kinds of stove plants, but chiefly such as flourish best in a damp atmosphere, at least while they are young and growing fast; therefore it will give a very good idea to the student of stove plants if we enumerate the principal tribes which are wintered here, and also to the collector of rare plants if we give the names of the greatest rarities in this house.

Let us begin with the Water-Lilies, of which *Nymphaea cærulea* and *Devoniana*, the finest of them, were in bloom; and *cyanea*, with *dentata*, had just done blooming. The young plants were very numerous, and of the following kinds:—*N. thermalis*, *Ortigiesiana*, *Guianensis*, *esculenta*, *sanguinea*, *gigantea*, *stellata*, *rubra*, and several kinds of *odorata*, including a night-flowering kind, which is called *nocturna*; also lots of *Pistia stratiotes* floating about. This is the "Water Soldier" of the Indies, and only requires to be thrown into water to increase and multiply enormously.

Inverted pots and other pedestals hold up an immense

number of plants above the water line. Among them are twenty kinds of Palms, thirty kinds of Bromeliads, all the kinds of Dracenas and allied plants, Calatheas, Heliconias, Hedychiums, Marantas, Crinums, Vanillas, Pandanus, Musas, Philodendrons, Plumierias, and many more; but let us name some of the rarest and more conspicuous.

Encholirium Jonghi is one of the newest among Bromeliads; *Nidularium fulgens* and *pictum* are not unlike it in leaf and habit; *Vriesia glaucopsis*, *speciosa*, and *psittacina*; *Echmea fulgens*, *discolor*, *miniata*, and *Melinovi*; *Guzmania spectabilis*, *tricolor*, *picta*, and *erythrolepis*; *Billbergia gigantea*, another of M. de Jongh's new plants; *B. splendida* and *marmorata*, quite new; *rhodo-cyanea*, fine; *granulosa*, *Oxayana*, *Morelliana*, *vittata*, and several new and not yet named ones, every one of which is as easy to grow as a common Cactus, and almost as easy to increase by side-suckers, and none of these Bromeliads require much room.

Among miscellaneous plants *Freycinetia Baueri* or *Baueriana*, from Norfolk Island, is a rare thing; and a beautiful-leaved Cycad, *Carludovica pumila*, in the way of a young Pandanus, *Plumieria* sp.; *Doryanthes excelsa* and *Dasylium Texanum*, two conservatory plants, kept here to push them on in the world; *Cycas circinalis*, fine; and several young *Crinums*, which look like *amabilis*, or some large kind of *cruentum*. Among the larger plants, which are of sizes for matching in pairs, take the following:—*Tillandsia vittata*, *Pourretia frigida*, splendid pairs of *Maranta zebrina*, *Pandanus utilis*, *Philodendron pertusum* and *pinnatifidum*, *Dracena umbraculifera*, *Encholirium Jonghi*, *Pandanus Javanicus variegatus*, fine; also, *Philodendron macrophyllum*, with immense leaves; *Mikania speciosa*, a climbing Composite; *Calanthe pardina*, *Bromelia sceptrum*, *Musa zebrina*, *Pandanus graminifolius*, and many of those fine-leaved plants which have been recently imported from the Continent, some of which no botanist in this country has ever yet heard the names.

PITCHER-PLANT HOUSE.—This was the most interesting house in the establishment to me. It is much on the same plan as the Aquarium. There is a large open tank of water down the whole length of the house, and inverted pots in the water to hold pots of Pitcher-plants out of it. Three-inch galvanised iron pipes heat the tank to 70°, and the house is kept up to 75°. This house promises to be one grove of Pitcher-plants in a few years. Some of them climb up in all directions already, and the air and temperature are found to be very suitable to force Indian Orchids into bloom. There were quantities of *Phalænopsis* hanging from the roof for that purpose, alternating in the front row over the water with *Nepenthes lanata*, a rare kind, and glass pans filled with old and young plants of the *Ouvirandra fenestralis*, and there were some of them in earthenware pans, as at the Kingston Nursery; and on my remarking how much better the plants in the earthenware seemed to thrive, I was told a secret, which is, that glass is the worst thing on earth for growing any tender or very delicate plants in, and the reason is, that glass is so much more influenced by every or the least change of temperature—a very likely conclusion; but who would have thought it in the middle of a tank in a hothouse? *Nepenthes Rafflesiana*, *sanguinea*, and *lævis*, full of pitchers; *vittata*, with its clusters of speckled pitchers at the base of the stems, and resting as it were on the top of the pots; *ampullacea*, very rich; and as climbers *lævis* and *phyllamorphæ* run as fast as the old *distillatoria*; *Cephalotus follicularis*, the New Holland Pitcher-plant, very large and full of pitchers, while my plant of it has stood all this year's frost without fire heat yet, and I only lost one self-sown *Calceolaria Chelidoniifolia*. Large specimens of *Platynerium grande* show how well this Fern does in a high, moist atmosphere; *Pteris*

aspericaulis ditto, and also *Gleichenia microphylla* and *flabellata*, and some others which have been named from the Fern stove. D. BEATON.

(To be continued.)

COMBINING THE CULTURE OF VARIOUS FRUITS UNDER GLASS.

I AM not surprised that many readers are much more taken up with variety than with rarity or decided superiority. It is always pleasant to help a correspondent to produce a desired effect, even though our judgment would lead us to act differently in the circumstances. It is with a corresponding reluctance that our duty compels us at any time to damp an earnest enthusiasm. The space under glass which many possess is so small, that they are in danger of having too much instead of too little under it. Vast variety may be obtained in the twelvemonth by rotation of crops; but when many of the residents are fixtures, such as Vines, Peaches, &c., it would be well to remember that all the plants generally cultivated in small houses will thrive well in proportion to the free access they have to light whilst growing and flowering. Much will also depend upon the variety of the plants chosen delighting in a similar temperature and atmosphere. With these preliminaries, and to save room, I will now advert to a number of inquiries.

1. "A CLOD HOPPER" proposes changing his present greenhouse into a forcing house—it is already supplied with Vines and Peaches on the back wall—and adding to it a cool greenhouse, with a glass division between. Against this division in the Vinery side he proposes planting a Nectarine, and on the greenhouse side an Apricot, and to have *Sweet Water* Vines in the greenhouse, and advice is asked as to kinds, propriety of such plans, &c. If decided upon, a *Moorpark* Apricot and an *Ebruge* Nectarine would do as well as any. I lately mentioned several instances in which Peaches were trained across the house in the manner proposed, and in such a house the Nectarine would do nearly as well as the Peaches against the back wall, provided it had an equal amount of light. No Peach or Nectarine trees will long remain fruitful if grown in much shade. The leaves will look nice and healthy, and the fruit-buds will swell seemingly all right; but as they begin to expand it will be found that many will drop, and many will be deficient in the parts of fructification. I have examined hundreds of blossoms without finding a female organ—the embryo of the fruit. For Peaches to thrive against the back wall of a Vinery the Vines up the rafters should be from four to six feet apart; and for a tree to succeed against a glass division the Vine rod should be quite as far from that end. I succeeded very well once with such a tree, but I could not let well alone. I brought the Vine stem nearer to it, and took up another shoot close to the division over the Nectarine; and though the Nectarine fruited well the first year, because the buds were fully matured, the crop got less and less, and more inferior in quality.

In the cool greenhouse the Apricot will do admirably, as it is impatient of much forcing, and provided the roof is nearly open to the sun, so that there will be little or no obstruction to the light. Almost any sort of Vine would do better in such a house than the *Sweet Water*; for, though very early, it requires a high temperature when setting, much higher than would suit the Apricot. An experienced person might manage what an inexperienced person would find next to impossible; and, meantime, if you resolve upon Vines, I would recommend the *Royal Muscadine*, or even a *Black Hamburg*.

2. PLANTS, VINES, PEACHES, AND MELONS IN ONE HOUSE.—"A. C." has a Vinery and greenhouse in

the same range, divided by a glass partition. Singularly enough, he also proposes a Nectarine on one side of this partition, and an Apricot on the other, the back wall in the Vinery being covered with Peaches, to all of which the above remarks will apply; but there are two matters different. First, "the hot-water pipes in the Vinery are three feet distant from the partition, and sunk in the floor: will they affect the roots?" Not injuriously if the earth is separated from the pipes by a four-inch wall of brickwork, and security is taken for good drainage. Two feet eight inches in width of soil across the house would be sufficient if it was from fifteen to eighteen inches in depth. You have not said how deep the pipes were sunk. If less than eighteen inches, the roots might be allowed to run beneath them, as the lower pipe, if a return, will be rather cool on its under side; but if that depth and more, it will be better to restrict the roots to the narrow pit between the partition and the pipes. Secondly, "the centre of the Vinery is to be a pit for Melons, forcing flowers, &c., eighteen feet long by six feet wide, with a flow and return pipe of four inches through it. Would you advise me to fill this pit with sand and ashes, and grow the Melons in pots, or fill the whole with suitable soil at once for Melons? The Vines are young, and planted last spring, and are two *Black Hamburgs*, two *Golden Drops*, one *Black Barbarossa*, one *Muscat of Alexandria*. Will they do together?" Taking the last question first, I must own my ignorance of Golden Drop, but it is most likely a synonyme of some well-known kind. The others will do well enough. Give the Muscat the warmest end, then the Barbarossa, &c.

We do not know the length of the house, but, from your description, I should suppose it to be about thirty feet. If less than twenty-four, the shade of your Vines will ultimately injure the Peaches on the back wall, not to speak of the Nectarine at the partition. Your raised bed in the centre of the Vinery is a good idea. You will find it very useful for seeds, cuttings, and as a platform for tender plants in summer, and for hardier greenhouse or bedding plants in winter. When I first forced Vines on my own account I broke them almost entirely from placing strong fermenting matter in such a pit. I have had the house so full of rank steam for a week that you could scarcely see your finger at an arm's length. The only thing to be sure of was, that the fermenting matter was sweet before the Vines broke. Peaches would not stand so much; the fermenting material would require to be sweetish before it was introduced. You could get some assistance from your pit in bringing on the Vines and Peaches gradually if you had fifteen or eighteen inches of tan in it. Whatever you fill it with, it is important that you should have an out and in chamber about your pipes, say a foot deep, consisting of bricks, stones, clinkers, &c., placed as hollow and as far from each other as they will stand, covering them with rough gravel, and then with fine. In the sides of your pit, on a level with this roughish chamber about the pipes, you had better have several slides, so that when you did not want the bottom heat it would escape into the atmosphere of the house. The fine gravel referred to above would be considered the permanent covering to the pipes and their rough chamber. It matters not greatly what you use above that as a plunging medium; sand would be the cleanest, but as combining neatness and efficiency, I would prefer tan from a tanner's yard if easily procurable, and rather dry. The sand and ashes will merely retain for a time the heat given from the pipes. The tan will do this, but, in addition, be a source of heat in itself so long as it is not thoroughly decomposed, while the sweet gases and moisture rising from it will help to make the Vines and Peaches break kindly. For all propagating purposes such a pit would be very useful,

and for forcing plants it would be equally useful before the Vines were in leaf, and would do no harm, provided the plants were not so tall as to shade the Peaches. By means of the bottom heat the plants in the pit would be more forced than either the Vines or Peaches. In such a combination forcing must proceed very gently; in fact, the Peaches must be in bloom and fully set before the Vines are little more than budding.

I wish I could speak as confidently of the success of the Melons. With less convenience I have had Peaches, Vines, Figs, Guavas, Melons, Cucumbers, &c., in the same house; but it would be a mistake to suppose that such a mixture involved no difficulties and no extra amount of trouble. If Vines and Peaches have justice, I fear that our correspondent can hope to grow Melons only until his Vines are fully established. To get good fruit the foliage must be pretty well as fully exposed to sunlight as is the Vine.

While the Vines are growing, the upper part of the house may have Melons in summer, and in the open spaces in Vineries I have had fine Melons. In such circumstances they do best trained to a single stem, and then stopped when at the necessary height, and the branches kept about eighteen inches from the glass. In such a house, with the pit, perhaps, three or four feet from the glass, it would be time enough to sow the Melons when the Vines broke, and protect them in the pit under a handlight until the Grapes were in flower, when the temperature that would suit the Vines would suit them. In such a pit Cucumbers would do very well, allowing the shoots to run on its surface, and over the walls if the roof was not too densely covered, as, provided the fruit swells, there will be little matter about the flavour. For the reasons stated in the circumstances, Melons could only be admissible for a season or so, and afterwards be reduced to a few plants where there was a larger opening, as every obstruction to the light passing freely to the back wall just lessens the chance of success with the Peaches.

Another argument against the culture of the Melon in such circumstances is, that it is more liable to the red spider and thrips than either the Vine or the Peach, and great care will be requisite to keep the plants thoroughly clean, or the whole house may suffer through them. Were I to make a suggestion, it would be to shut off a space by another division for Melons, and if you had a Vine there to dispense with the Peach, and the Melons would then receive more justice, and other things be less liable to danger. Fifteen or eighteen-inch pots would grow Melons quite strong enough. Failing that, I would divide the pit longitudinally, and divide each division again into spaces from two to three feet long, supposing the depth of soil to be fifteen or eighteen inches. Were the whole roof devoted to Melons, you might thus divide, use pots, or fill the pit at once without any division; but pots or divisions are best when you allow the plant a limited space of head room.

R. FISH.

CULTURE OF THE EXOTIC HEATHS.

(Continued from page 184.)

IN the following list those marked with an asterisk are the best for a small collection, though they are all very beautiful. I might have extended the list by several hundred species and varieties; but I am persuaded the number I have enumerated is sufficient to stock the largest greenhouse in the kingdom.

SELECT LIST OF GREENHOUSE HEATHS.

These flower in March, April, and May:—

Erica Andromedæflora (Andromeda-flowered), red.

„ **ardens* (glowing), orange red.

- **Erica aristata* (bearded), purple and white.
 „ **Cliffordiana* (Lady Clifford's), white.
 „ *colorans* (colouring), white, changing to red.
 „ *conferta* (crowded), white.
 „ *exurgens* (arising), scarlet orange.
 „ *gracilis* (graceful), purplish red.
 „ **grandinosa* (hail-stone), white.
 „ *Humeana* (Sir A. Hume's), pink.
 „ *Leeana* (Lee's), orange yellow.
 „ *Linnæoides* (Linnæa-like), purple.
 „ *metulæflora* (nine-pin-flowered), red.
 „ **mirabilis* (admirable), purple and white.
 „ **mundula* (neatish), white.
 „ **mutabilis* (changeable), purplish red.
 „ **odora-rosea* (rose-scented), white.
 „ *persoluta alba* (slender white), white.
 „ „ *rubra* (red), red.
 „ *perspicua* (clear-flowered), white.
 „ „ **nana* (dwarf), white.
 „ *primuloides* (primrose-like), purple and red.
 „ *pyramidalis* (pyramidal), pink.
 „ *refulgens* (refulgent), scarlet.
 „ *scabriuscula* (rough), white.
 „ *tortuosa* (twisted), white.
 „ *triumphans* (triumphant), white.
 „ *trossula rubra* (red spruce), red.
 „ *tubiflora* (tube-flowered), red.
 „ *vernalis* (spring), pink.
 „ *vernix major* (varnished), greenish yellow.

The following flower in June, July, and August:—

- **Erica acuminata* (pointed-leaved), red.
 „ „ *alba* (white), white.
 „ **Aitoniana* (Aiton's), white and purple.
 „ **ampullacea* (flask-shaped), white and red.
 „ *Bandoniana* (Bandon's), purple.
 „ *Banksiana purpurea* (Banks' purple), purple.
 „ **Beaumontiana* (Beaumont's), purple.
 „ *Bergiana* (Bergius's), purple.
 „ *campanulata* (bell-flowered), yellow.
 „ *Cavendishii* (Cavendish's), yellow.
 „ *Coventryana* (Lord Coventry's), pink.
 „ **curviflora* (curve-flowered), yellow and red.
 „ *densa* (dense-leaved), red.
 „ *denticulata moschata* (toothed musk), flesh.
 „ **depressa* (drooping), yellow.
 „ *Eweriana* (Ewer's), pink.
 „ **eximia* (choice), scarlet.
 „ *fastigiata* (peaked), white.
 „ *ferruginea* (rusty), red.
 „ *formosa* (charming), red.
 „ *halicacaba* (nightshade), yellowish white.
 „ **Hartnelli* (Hartnell's), purplish red.
 „ *Irbyana* (Irby's), white, tipped with green.
 „ **jasminiflora* (jasmine-flowered), white.
 „ *jubata* (maned), white.
 „ **Lambertiana* (Lambert's), white and pink.
 „ *mammosa* (nipped), purple.
 „ **oblata* (bottle), white and purple.
 „ *ovata* (egg-shaped), pale purple.
 „ **Parmentieriana* (Parmentier's), pale purple
 „ *princeps* (princely), scarlet.
 „ *propendens* (hanging), pale purple.
 „ **retorta major* (greater curled-back-leaved), red.
 „ *rubrosepala* (red-sepaled), red and white.
 „ **Savileana* (Savile's), red.
 „ **Shannoniana* (Lady Shannon's), white.
 „ *splendens* (shining), scarlet.
 „ **Sprengelii* (Sprengel's), yellow and crimson.
 „ **Sindryana* (Sindry's), white and purple.
 „ **suaveolens* (sweet-scented), pink.
 „ **tricolor* (three-coloured), many varieties, red, green, and white.

- **Erica ventricosa* (bellied), many varieties, white, red, and scarlet.
 „ **vestita* (clothed), many varieties, white, purple, and scarlet.

The following flower in September, October, and November:—

- **Erica Archeriana* (Lady Archer's), red.
 „ **Bowieana* (Bowie's), white.
 „ *carinata* (keeled), purple.
 „ **cerinthoides* (honeywort-like), dark scarlet.
 „ *concinna* (neat), flesh.
 „ *exurgens grandiflora* (rising large-flowered), orange.
 „ **infundibuliformis* (funnel-shaped), pale red.
 „ **Massoni* (Masson's), red and green.
 „ *obtusata* (blunt-leaved), purple.
 „ *pellucida* (clear), white.
 „ *pilularis* (pill-like), white.
 „ *pinæa* (pine-leaved), red.
 „ „ *discolor* (two-coloured), red.
 „ „ **favoides* (honeycomb-like), red.
 „ **radiata* (rayed), crimson.
 „ *ramentacea* (scaly), dark red.
 „ *versicolor major* (greater various-coloured), scarlet
 „ **verticillata major* (greater whorled), scarlet.

The following flower in December, January, and February:—

- **Erica australis* (southern), purple, *nearly hardy*.
 „ *distans* (distant), violet.
 „ *droseroides* (drosera-like), purple.
 „ **hyemalis* (winter), pink and white.
 „ *lutea* (yellow), yellow.
 „ *oppositifolia* (opposite-leaved), purple.
 „ **persoluta alba* (slender white), white.
 „ **transparens blanda* (charming transparent), pink, changing to red.
 „ **Westcottiana* (Westcott's), red and white.
 „ **Wilmorea superba* (Wilmore's superb), red and white.

T. APPLEBY.

NOTES FOR FEBRUARY.

THE success of gardening operations through the ensuing season will depend very much upon the careful and active performance of the routine duties that this and the following months will require. Successional sowings of *Peas*, *Radishes*, and *Lettuces* to be made, and *Spinach* between the rows of *Peas*, and a good breadth of *Broad Beans*, which will produce a more abundant crop planted now than at a later period, and a small bed of *Brussels Sprouts* for early planting; also *Cabbages* of sorts, a few *Carrots*, *Turnips*, and *Parsley* for transplanting one foot apart. *Plantations of Cabbages* that were pricked out in beds in the autumn to be made; a pan of *Celery* to be sown for early use, and the *early Potatoes* intended for seed to be spread out very thinly on any dry floor or shelf, where they will make strong, healthy buds for planting towards the end of the month, or the beginning of March, in a sheltered situation. The ground to be deeply trenched and richly manured for planting *Sea-kale*, *Rhubarb*, and *Asparagus* next month, and a good breadth of *Parsnips* to be now sown on ground deeply trenched, with the manure at the bottom. As the seedling plants of *Cauliflowers* and *Lettuces* in frames are very apt to damp off at this season, it is advisable to sprinkle some dry wood ashes or dry sand amongst them to absorb the moisture, and if too crowded to be thinned out to prevent them fogging off. The *Cauliflowers* that had been kept in pots to be planted out, four plants under each handlight, in a warm, sheltered situation.

As the *Bourbon China* and *Tea-scented Roses* will flower throughout the summer and autumn months, and will

require very little attention after planting, they deserve a place in every flower-garden. The soil to be taken out of the bed at least one foot deep, and filled up with rotten dung and stiff loam well mixed up together; all long and straggling roots shortened and bruised, and broken parts cut away. Choice of sorts for particular colours, &c., can be made from any Rose-grower's catalogue. Towards the end of the month the shoots of *Moss* and *Provence* *Roses* to be cut back to three or four buds. The strong shoots of *Hybrid Provence*, *Hybrid Bourbons*, *Damask*, *Perpetuals*, and *Hybrid Perpetuals*, to be shortened to six or eight buds, removing all the small spray and cross branches, and leaving the shoots at regular distances apart. The *Hybrid China*, *Sweet Hybrid*, and *Austrian Briar* *Roses* require but very little pruning, merely to shorten the tops of the shoots, and to thin these out when too thick. To postpone pruning until April some of the summer-flowering sorts will give a succession of bloom for a fortnight or three weeks later.

A sowing of *Phlox Drummondii* should now be made, and placed in a gentle bottom heat for planting a bed or two in the flower garden, where it produces a showy effect during the whole season. Wood's variety, called *formosa*, is the best for the purpose. Cuttings of all sorts of plants for bedding-out purposes to be now put in, and excited by a gentle bottom heat either in a cutting frame or small forcing pit. Seed of *Salvia patens* sown now will produce fine plants for a bed or two in the flower garden; when pegged down its spikes of deep blue flowers give a massive appearance to the group. *Ten-week Stocks*, *German Asters*, and other half-hardy annuals to be sown, and treated with the same temperature as the cuttings until they have vegetated and are fit to prick off.

Florists' flowers will require particular attention. *Auriculas* and *Polyanthuses* to be top dressed with rich compost, the early bloom to be removed, and if the sickly appearance of any plant indicates canker and insufficient drainage, the knife should be used to remove the part of the roots affected, or more drainage to be given without breaking the ball of soil. This is a good time to take off the offsets before top dressing, three or four to be planted in a five-inch pot, and placed in a shady part of the frame. If desirous to obtain a batch of seedling *Auriculas*, the seed to be now sown in shallow pans, and placed in a cold frame. *Ranunculus*es to be planted about the middle of the month, the bed to be made level, the roots to be planted six inches apart, and an inch and a half deep, to be pressed firmly into the soil, taking care not to break any of their tubers. Seed may also be sown in well-drained pans, and filled with soil within half an inch of the rim; to be watered, and the following morning the seed to be sprinkled rather thickly over the surface; merely covered with sandy peat soil, again watered, and then placed in a cold frame and protected from frosts. The cankered leaves of *Tulips* should also be removed as soon as they are perceived. *Dahlias* to be excited by a brisk bottom heat, and when the young shoots are about two inches long to be taken off and treated as cuttings. *Pansies* to be top dressed with some light, rich soil, such as decayed leaves and thoroughly decomposed manure from the old Cucumber or Melon frames.

As the increasing light and warmth of the solar rays will arouse the *greenhouse plants* that have been kept comparatively dormant during the winter into a more active state of vegetation, many will now require *fresh potting*. The majority of plants from New Holland and the Cape of Good Hope delight in good, fibrous heath soil, in a rough state, with a good portion of silver sand and plenty of crock drainage. The object of drainage is not to get rid of the water, whether rain water or liquid manure, as soon as it is given, but rather the free dispersion and filtration of it through the whole of the soil, so as to obtain from it all its nutritious qualities in the course of its escape into the bottom. Water to be applied more freely to those plants that have been potted long enough for the roots to reach the sides of the pots. All plants after shifting will require a little genial warmth, either by removing them to the warmest part of the house, or to any place where the needful supply of heat can be given, to excite them to produce new roots in the fresh soil; but to produce a robust, sturdy growth, it is necessary to supply them abundantly with fresh air at all favourable opportunities. Any naked or straggling plants

that have not been lately shifted, if in a good state of health, may be shortened back to make compact, bushy specimens; after being cut back, syringing them occasionally will supply them with sufficient moisture until they have produced young shoots, when they may be watered more freely, and sometimes with clear liquid manure. Any plants in an unhealthy condition, through what cause soever, should be turned out of their pots, their balls of soil reduced, their roots slightly pruned, and placed in pots a size or two smaller in good fresh soil; by tying down the branches, and by exciting them into growth in a gentle bottom heat, they will break freely at the bends, and then can be pruned into good-shaped specimens.

The African Blue Lilies (*Agapanthus umbellatus*) are plants of ancient introduction, and are very generally discarded from the greenhouse, but for what reason we could never discover; in our opinion they are well worthy of more general cultivation. Towards the end of the month they should be fresh potted in a mixture of rich loam and well-rotted leaf mould or dung, and placed in a warm part of the house, where they will soon begin to grow freely; to be abundantly supplied with air and water, and liquid manure occasionally; indeed, treated as a sub-aquatic, one-third of the pot immersed in a pan of water, they will flower freely during the summer, and retain that beautiful deep blue colour which is a most distinguishing characteristic of the plant. A row of *Standard Fuchsias* on grass, at each side of a favourite walk, produces a noble effect during the summer and autumn months. Plants intended for such a purpose, or for general decoration, should now be brought from their place of rest, and be started into growth in a good bottom heat of 75°, having first trimmed the roots and repotted them. The nailing of *fruit trees* to be forwarded at all favourable opportunities, and *hardy annuals* to be sown in the open ground.—WILLIAM KEANE.

HEAD GARDENER FOR THE CHISWICK GARDENS.

It has been publicly announced by the Horticultural Society that they could not, in the specified time, find a first-rate gardener for £150 a year. I hope they will never have to tell "their customers," the landed aristocracy of the kingdom, that even a second-rate gardener can be had in this country for the money, and to provide everything for himself.

My own first situation, when I was hardly a fourth-rate gardener, was worth £150 a year, and there are many gardeners now round London, who are not much more advanced in gardening than I was then, whose salary, including everything, is above £100. In my second situation, which was close to London, the actual market value of "my hire" was worth as much hard cash as the Horticultural Society offers for house-rent, coal, candle, soap, and towels, and I had all these in addition, and had not more to do than one of the then foremen of the Horticultural Society; for it was at that time that Fortune, Gordon, and Thompson's salaries were raised to £100 each, and the Secretary's to £500. I can safely say that I know most of the first-rate gardeners in the kingdom, and out of them all I could only conscientiously point to five or six of them who possess the rare qualities which are necessary to carry on such a garden as that of ours at Chiswick; and seeing there is no more than the bare salary offered, before I could expect one of the six to throw up his present engagements to become the gardener of the Society, £200 is the lowest figure I should think of offering to him, but he ought to have no less than one-half the sum which is given to the principal Secretary. In public companies the invariable tendency of servants being underpaid is to make them the tools of anybody, or set of bodies, who may happen to be over or above them, whether such tools be for or against the interest or usefulness of the said company or society.—D. BEATON.

[We quite assent to most that Mr. Beaton has said in the above communication; but we think the Secretary ought to have £400 a year, and the head gardener £200. We have heard rumours of offers to serve gratuitously; but let the

Council not be seduced into that. An unpaid servant is always a blister which no one likes to dress, even when dressing is most needed.—Ed. C. G.]

WOODSTOCK,

COUNTY OF KILKENNY, IRELAND.

(The residence of the Right Honourable W. F. Tighe.)

THIS mansion is situated about fourteen miles south-east of the town of Kilkenny. It is approached from the north through the town of Inistiogue, beautifully situated on the banks of the river Nore.

On arriving at the principal entrance, which is at the top of a very steep street, a combination of the finest natural scenery attached to any gentleman's residence I have ever seen presents itself, and which continues all along the drive to the mansion.

The principal objects forming this almost unrivalled view are the town of Inistiogue, through which pass the silent, broad waters of the Nore; the noble stone bridge, with nine spacious arches, built over the famous Salmon Weir; the rising country beyond, studded with so many farm houses and cabins of the peasantry; the sub-divided fields so characteristic of Ireland, with here and there groups of trees; whilst from the glens tower up the spire-topped *Abies picea* (Silver Fir), as if trying to kiss and vie with the adjacent heights with which this seat is surrounded, and many fine old Oak, Beech, Elm, and pendulous Birch studding the steep from the carriage drive down to the very verge of the river.

A river, always giving life to the landscape, seems here to have a double power, bringing out every tint in bold relief and grandeur, and being, in this instance, so beautifully transparent that I could not help thinking, as I looked upon its waters, of Denham's two lines—

“Though deep yet clear, though silent yet not dull;
Strong without rage, without o'erflowing full.”

Who would not give in exchange their artificial fish ponds and miniature waterfalls, formed in many cases at considerable expense and pains, for such a gigantic and highly ornamental river as this? and how thankful people ought to be whose lot it is to be planted in such a natural paradise; whilst, in many localities, it requires the powers and genius of a Fleming to overcome the inanimate flats of Nature.

Arrived at the top of the steep, which continues from the bridge of Inistiogue, I went to the gardens to inquire for Mr. Butler, the head gardener, and he very cordially showed me over the grounds.

The kitchen garden is situated on rising ground to the west of the mansion, sloping from west to east; and singularly, though not unsightly, it is placed in the middle of the pleasure ground.

The forcing houses, of which there is a good range, though old, are still in good repair. In one division I observed a whole houseful of *West's St. Peter's* Grape, hanging plump and full of bloom. Mr. Butler told me he manages to have a supply of old Grapes till new ones come, which he has from a Pine pit. They were in a very forward state when I saw them.

Mr. Butler seems to be an advocate for pyramidal *Pears* on Quince stocks. He had several lines of young trees along the back of the borders of the kitchen-garden walks; and, to prevent their *rooting above the graft*, he had the ground considerably raised and the trees planted very shallow.

In the centre of the kitchen garden is a very spacious Rose trellis, which is viewed from the pleasure ground on either side through highly ornamental cast-iron gates in the garden wall, which not only relieve the eye, but form an object of considerable attraction, and will be rendered more so when Mr. Butler's pyramidal Pear trees get furnished. On the wall at the west end of the glass range I observed a fine spreading plant of *Chimonanthus fragrans* expanding its deliciously-scented blossoms.

The walls opening to the flower garden and pleasure ground are very appropriately furnished with a variety of climbers. The *Magnolia grandiflora* flowers here freely.

There were also fine plants of *Garrya laurifolia* and *G. elliptica*.

To the west of the kitchen garden is the terraced flower garden, on one of the parterres of which is a very extensive chain border in Box. Above that is a fine curbed, diamond-shaped border, equally extensive. These beds were naked when I saw them; but, judging from their length and the store of bedding stuff Mr. Butler had in the pits, they cannot fail to look well.

Situated at the north extremity of the terraced flower garden is a highly ornamental iron conservatory, with a dome-shaped roof. It was gay with Chrysanthemums and Epacrises, also some good specimens of Azaleas and Oranges. The design of this house seemed very appropriate to its situation, views of which are had from different parts of the pleasure ground.

To the west of the flower garden, and also on rising ground, grow the famed *Coniferae* of Woodstock. They seemed to delight and *know how* to luxuriate in this our humid, mild climate; not one of them had the least symptom of ever being tinged by frost—all had the most robust appearance.

The Pinetum is bounded on the south, west, and north, by large Beech, Elm, and Holly, with a fine border of Rhododendrons and groups of Kalmia, which, like all other plants in this favoured county, flower freely.

I am enabled, through the kindness of Mr. Butler, to give the heights of a few of the Pines which were most attractive.

Araucaria imbricata, 32 feet, beautifully feathered and proportioned. Not having seen the one at Dropmore, this is the finest I have yet seen.

Pinus Hartwegii (Hartweg's Pine), from Mexico, 15 feet high, with beautiful long leaves, and highly ornamental.

P. Ayacahuite, 17 feet high, resembling Hartweg's. It is also from Mexico.

P. ponderosa, 15 feet high. The heavy-wooded Pine from the banks of the Columbia, North America.

P. excelsa, 18 feet high, and beautifully furnished, from Nepal.

Abies Douglasii, 30 feet high, from North America. This plant always holds good its position in every collection.

A. Menziesii, 15 feet high, from North America.

A. Morinda, 25 feet high, from North India. This plant has not yet coned, though I have seen cones on plants not more than 6 feet, but they were rather stunted.

Picea Webbiana, 18 feet high, from the Himalayas. It had 9 large purple cones; last year it had 12. It is remarkably vigorous.

Cryptomeria Japonica, two fine plants, one 25 feet, the other 30 feet, beautifully furnished and full of seed; from Japan.

Cupressus Goveniana, a fine plant, full of seed, from California.

The pleasure ground is well laid out and in excellent keeping. At every turn interesting plants of the Conifer tribe present themselves. Two remarkably fine plants of *Cupressus Lambertiana* and *C. macrocarpa*, each 15 feet high. A fine plant of *C. funebris*. I also observed a very promising plant of *Ilex latifolia*.

Besides the grown-up *Coniferae*, now so attractive, there were many others through the grounds which had lately been planted.

Mr. Butler took me to a part of the grounds where we had a view of an avenue about 300 feet long, planted on each side with *Araucarias* varying in height from 4 to 8 feet. I was also brought to another avenue on the north of the kitchen garden, which was planted on one side with *Cedrus deodara*, and on the other with *Cryptomeria* and *Taxodium sempervirens* alternately. I was shown a rockery formed of immense blocks of quartz, over which trickled a stream of the most limpid water. Passing through a rocky tunnel we entered a grotto, and from thence we again emerged into the pleasure ground.

I was sorry my time did not admit of going to other distant and equally interesting parts of the grounds which lie along the banks of the river, and are much resorted to by pic-nics of the *élite* of Kilkenny, Gowran, and other neighbouring towns.

The description I have attempted to give of Woodstock

is but very meagre, though I hope what I have stated may be sufficient to show how highly favoured we are as regards climate. As Kent is considered the garden of England, in like manner may Kilkenny be admitted as the garden of

Ireland; and, in taking advantage of it, the greatest credit reflects on Mr. Butler for what he has effected at Woodstock, and to his employer for giving him the means.—
WILLIAM MILLER, *Gowran Castle Gardens.*

THE CULTURE OF RASPBERRIES AT HAARLEM.

(Translated from the *REVUE HORTICOLE.*)

We have shown in our *Traité d'Arboriculture* what appeared to us the most convenient method of cultivating the Raspberry in the fruit garden. That method presents especially this advantage, that the fruit-bearing canes of the year

are completely isolated from those which bear fruit in the year following; and hence all confusion is avoided, the fruit is more easily gathered, is more exposed to the influence of the sun, and is of better quality.

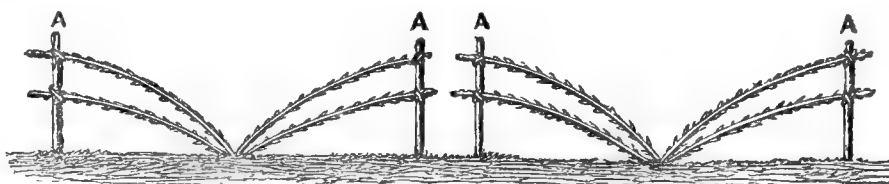


Fig 1. Raspberries after the winter pruning.

The Raspberries are planted in rows about three feet three inches apart, and five feet distant from each other in the rows. When the planting is completed each of the rows will be placed in a small furrow about a foot in depth; the superabundant soil being raised on each side serves to top-dress and raise up the plants. During summer only four new canes are allowed to be developed by each plant, choice

being made of the most vigorous, and those which are placed nearest to the original stock; the others are removed when they are about a foot high. In the spring following the old canes are removed, and the four new ones are shortened, so as to leave them two feet and a half in length. They are then tied down to two stakes, as represented in Fig 1, *a a*.

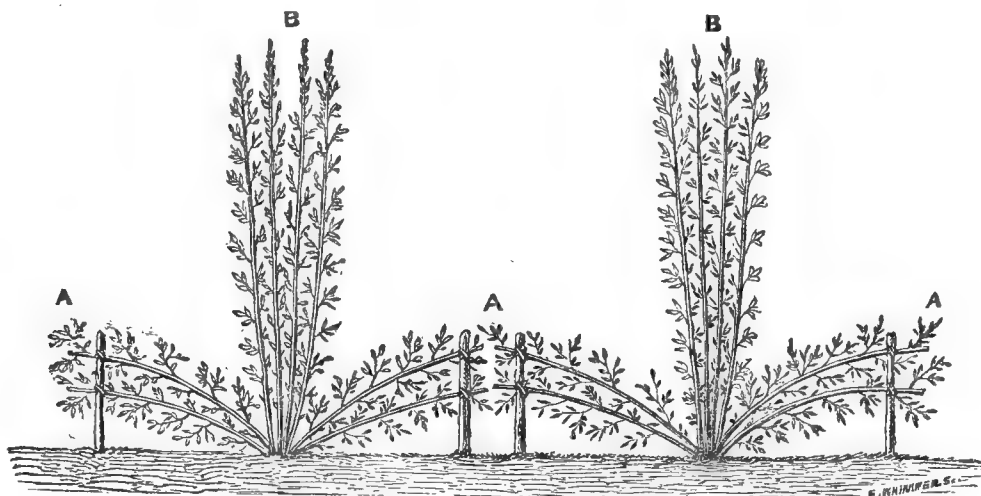


Fig. 2. Raspberries during their growth.

During summer the canes *a a a*, Fig. 2, which were pruned and tied down in the spring, bear fruit, and four new canes, *b b*, are produced from each stock. At the winter pruning following the canes *a*, Fig. 2, which have borne fruit, are cut away, and the new canes produced from *b b* are shortened back to two feet and a half, and tied down to the place

occupied by the fruit-bearing canes the year previously. The same operations being repeated each year, the result is, that the fruit-bearing canes *a*, Fig. 2, are always isolated from the new ones *b*, and that confusion and other inconveniences which we remarked at the beginning of this article are avoided.—DU BREUIL.

QUERIES AND ANSWERS.

MANAGEMENT OF SCARLET GERANIUMS FOR WINTER BLOOMING.

"I selected eight plants from my stock, and retarded them behind a north wall until the end of September and beginning of October, giving them their final shift into eight-inch pots some time previous to this. I was then rewarded for my labour with eight splendid plants, very dwarf, with plenty of foliage, nearly hiding the pots from view, and abundant bloom. About the 12th of October I removed them to the greenhouse, just a day or two before the rain came on in that month. They had not been in their new quarters above three weeks or a month before some of their leaves began to turn yellow, and dropped off, and so they have continued up to the present time, until

they are mere skeletons, with no bloom and very little foliage."—T. T.

[What could you have been thinking about when growing scarlet Geraniums behind a north wall the whole summer and down to housing time, and then to have them fresh potted in September? Have you not read in every one of our volumes that even to strike Geranium cuttings behind a north wall is mad heresy, and only encourages downright laziness in the man, and a soft, spongy, flabby growth, which it is difficult to keep alive in winter? Yet cuttings make but a small part of their growth while they are rooting behind the wall, whereas your plants made a season's growth there. If we had a long arm and a shepherd's crook we could haul in just now as many scarlets in bloom, from our sanctum conservatory, as would "set up" a princess's wedding.—*Tom Thumbs, Cerise Unique, Lady Middleton*

and *Baron Hugel*. The average temperature is 40°, air very dry, and on day and night, unless the glass is below 30°, abundance of room, and the roots pot-bound. The plants were never out of the sun from the time they were cuttings, nor were their parents or grand-parents.

The best degree of heat for keeping flowering scarlet *Geraaniums* in winter is not yet fully determined, but the air must be dry and constantly in a pure state, and also constantly in motion if possible. We often keep the flues going with air on top and bottom, and in frosty weather we get the flues pretty hot before we shut up. Single trusses then keep in blossom *above eight weeks*. Your leaves were dying for want of air, or change of air.]

PRUNING HEATHS.—DIRECTIONS TO MANSIONS.

"It has struck me to suggest that the promised list of select Cape Heaths would be additionally interesting and useful if it gave information as to which of them should be freely cut down after blooming, which of the shoots merely pinched, and which, if any, left entirely without pruning. I am only interested at present as to the treatment in this respect of the following varieties:—*Erica Westcottii*, *Archeriana*, *Linnæoides superba*, *aristata vittata*, and *grandinosa*. Of the rest of those I cultivate at present the treatment in this respect I am informed of.

"May I be allowed another suggestion?—That some of the interesting accounts of noblemen's and other places well deserving inspection, published by you from time to time in the pages of *THE COTTAGE GARDENER*, have appeared to me deficient in information as to the precise locality, not even the county or nearest town of importance being named, presuming, I suppose, that every one must have the requisite knowledge of the whereabouts of these places, so well known for some distance round in their respective neighbourhoods. I have no doubt many besides myself have felt the desirableness of more precise information in connection with these localities. What I wish is, that a tabular list be published of places already so described in *THE COTTAGE GARDENER*, with their situations; from what railway-stations they are most easy of access; whether accessible by payment of a moderate fee; what days of the week they may be seen, if confined to certain days, and so forth. Such a list would be very useful for reference to many intending tourists, who, for want of such information easily come at, are liable to pass such places without being aware of their close proximity to their track."—CRAVENENSIS.

[Your suggestions are seasonable, and shall be attended to, and we are obliged by your hints. With regard to pruning Heaths it is only necessary to attend to the habits of growth of the different species in order to arrive at the knowledge what to do in that respect with each. We will take for instance the few kinds that you name. *Erica Westcottii* is a moderate grower, sending forth many branches naturally; hence the pruning necessary in order to keep the plant in form only amounts to shortening in any shoots that may take the lead of the rest. *E. Archeriana* is a strong grower, and should have every strong shoot shortened in immediately after the blooming is over. In general each yearly shoot should be cut in to half its length, and, in order to make room for the new shoots, the outer branches should be tied or spread out to sticks placed at the outside of the bush. *Erica Linnæoides superba* is also a free grower, and should be cut in more severely, and that operation should be performed directly after the bloom is over, and then the plant should be allowed to make some growth previous to repotting. *Erica aristata* var. *vittata* is a slow grower, and all it requires in pruning is merely to nip off, with the finger and thumb, the extreme points.

These three classes of Heaths embrace the whole of the tribe that are fast growers, medium growers, and slow growers. The only point to attend to is a firm resolution to prune them well in the moment the blooming season is over, in order to give time for the new shoots to grow sufficiently strong to bloom freely the following season.

With regard to your second suggestion, namely, the situations of any places described in our pages, we believe, for the most part, the writers of those pages do mention all that you name. Perhaps in some of the earlier numbers that

desirable information may not have been given so fully. You mention "accessible by payment of a moderate fee." We fear, if that were alluded to at all, it would be offensive both to the owner of such places and the gardener also. We have requested our contributors, when they describe places they may visit and give a report of them, to attend to giving the locality, and by what means they may be reached. No doubt a tabular list of every good garden in Great Britain would be useful to tourists, and any information as to the public days, if any, on which the place or places are allowed by the owner to be seen by strangers. There are a few of that description in the country, but that restriction only amounts to indiscriminate visitors. There are very few indeed so exclusive as not to admit respectable garden-loving tourists at any reasonable hour of the day all the year round.]

PLANTING VINE-BUDS.—CUTTINGS OF ROSES IN WINTER.

"I shall be obliged for the information when it is the proper time to plant the eyes of Vines for propagation, and if they will require a moderate hotbed to forward them. I have the cut shoots kept in a pot of earth, their ends about three inches covered with earth. I should also like to know if the bottom of the eye should be cut straight across or sloping.

"I have just purchased a good plant of the Rose *Beauty of Billiard*, and I wish to try and propagate it. I find by a Rose catalogue it is a *Hybrid China*. I wish to know if this Rose will succeed by cuttings. There are more shoots than should be left to flower. I should be obliged by information how the cuttings should be made for striking; also if the cuttings should be covered with a glass."—M. F.

[The Vine eyes will be time enough, and more safe under the circumstances, if you leave the cuttings out of doors in the ground till the first week in April, then to cut the shoot a little away from the top and bottom of the eye right across, and then to form both ends into a wedge shape by a slant cut from the opposite side of the eye, and press the wedge sides down in the centre of a small pot till the eye is just out of sight, and no more. One eye in one pot is best, and the back of a Cucumber frame in April is as good as any other place. But such eyes may be "put in" from October to April, and that behind a wall, in sand, as for cuttings, when most beautiful Vine plants will come from them the following summer; then to be cut down to one or two eyes in October, and to be planted out "for good" the following February. Gardeners make eye cuttings any time after the new year.

Cuttings of the *Beauty of Billiard* Rose will only give five rooted plants out of the dozen when they are put in so late as this. Slip off the smaller shoots out of the socket as it were—then you have a heel to each cutting; trim off the jagged bark round the heel, and cut the shoot to four inches, and you have the best mode of Rose cuttings. Plant them in pure sand, and three inches deep, in a shady place. If there is one inch of sand about the bottom of the cutting it is enough. See that they do not get too dry any time during the summer. A hand-glass over them will be of great service if you watch against damp. The bottom of the cutting ought to be made as firm in the soil as possible.]

EVERGREEN AND DECIDUOUS SHRUBS FOR A TOWN CHURCHYARD.

"Will you favour me with a list of Evergreen and Deciduous Shrubs suitable for a churchyard situated in the centre of a county town, as I find many varieties will not stand the smoke? Likewise oblige me with instructions relative to the preparation of the ground and planting."—A. Z.

[Box, Yew, and *Aucuba Japonica* are the best evergreens to stand the smoke of towns; Lilacs, Snowberry plants, Laburnums, Guelder Roses, and common Honeysuckle the best flowering deciduous trees. If the ground is hard, as is most likely the case, it ought to be trenched two spits deep, and that without a day's delay, as the plants ought to be

planted before the first half of March is out. The place should be kept as clean from weeds, and as regularly dug and attended to, as a gentleman's garden, till the plants are big enough to almost meet. It would be a most marked improvement to sweep out all "churchyards" from amongst us.]

MANAGEMENT OF THE AIR IN GREENHOUSES DURING WINTER.

"At page 216 Mr. Beaton says, 'There is only one thing we attend to in managing these pits, the greenhouse and conservatory different from what you see in gardening books, and that one thing is, *we never make use of sun-heat to warm the air inside during the whole winter*, and those who do otherwise, and shut up their pots and houses in winter in the afternoon of a sunny day, with a view of using less fire that night, and having less stress upon the plants in consequence, must have their philosophy from the moon.'

"As the practice condemned in the above paragraph is the system I have followed practically for a considerable number of years, and as I never at any time in winter had recourse to fire heat, when, by the aid of sun heat or from the state of the weather, I was enabled to exclude frost or damp out of the houses, I wish to be informed if Mr. Beaton would have it understood that he excludes sun heat entirely from his houses in winter as injurious to plants?

"If Mr. Beaton will be kind enough to explain his system I, from the known ability of Mr. Beaton, shall be inclined to give it a trial."—P. SINCLAIR.

[Whatever the degree of heat one wishes half-hardy plants to be in during the winter, whether by night or by day, whether in frosty weather or in rains and fogs, the top and bottom ventilators of houses, and the "back air" on pits and frames, ought to be kept open, if ever so little, till the mercury showed the heat to be down very near the required degree for the night, and that implies that if no frost is expected, "air should be on all night," and so it ought. The philosophy of the practice is, that warm air holds more moisture in it than cold air, and frost goes through glass as fast as heat; therefore, when you inclose warmer air than you mean to keep all night, you allow it to cool, and in cooling it loses the power of holding the moisture, and it must part with it and cause drip in all parts of the house, or so much damp as hurts tender leaves and soft wood most materially.

The effect of closing sun heat, as we say, in winter, if frost and fire succeed, is to force plants in the most natural way; that is, by diffusing warm, damp air among them. We all agree there is no forcing so good or like that by dung hotbeds, and by closing houses early in the afternoon of fine days; but in winter we differ materially, as your practice attests. Even if you never see a "drip" in your houses you are forcing, to a certain extent, all the while by keeping up damp air, that is, warm air cooled to the damping point. A man of our early acquaintance, in the time when hot water was not thought of, would light his fires, or rather, order them to be lighted, in the afternoon, and still would keep his top and bottom ventilators open till the air was as low or cold as he wished it to be next morning. At daybreak between 35° and 40° was his pitch for closing the greenhouse, according to the weather. In hard weather close at 40°; when not hard only close at 35°. He was the best gardener of his day.]

LOCUSTS OF PALESTINE, OR ST. JOHN'S BREAD.

"Can you give me any information respecting this article, which is used by farmers for fattening cattle? I have heard several accounts of it and its habit of growth, but from no very reliable source. Its form and size are that of a full-grown Scarlet-runner Bean, but of a very dark colour, very sweet, dry, and hard."—J. C. W.

[The pods you mention are from the *Ceratonia siliqua*, or Carob Tree, called in the south of Europe *Algaroba Bean*. It is a native of Italy, southern Spain, and Palestine. There is no better notice of it than the following in old "Gerarde's Herbal":—"It groweth in sundry places of Palestine, where there is such plenty of it that it is left unto swine to feed upon,

as our Acorns and Beech mast. Moreover, both young and old feed thereon for pleasure, and some have eaten thereof to supply and help the necessary nourishment of their bodies. This of some is called St. John's Bread, and thought to be that which is translated "locusts," whereon St. John did feed in the wilderness, besides the wild honey whereof he did also eat. I rather take the husks or shells of the fruit of this tree to be the cods or husks whereof the prodigal child would have fed, but none gave them unto him, though the swine had their fill thereof. I have sown the seeds in my garden, where they have prospered exceeding well."]

BERBERIS ASIATICA AS A HEDGE SHRUB.

"I want to divide off a part of my flower garden by a low hedge, say about four feet high. What kind of shrub do you advise me to plant? Being planted at the back of a three-foot border it must not take up much room, as I wish to place greenhouse flowers in front during summer. One that would bear pruning well I should prefer, and it must not grow higher than four feet. If a flowering and pretty shrub I should much prefer it. Will any of the *Rhododendrons* bear this treatment?"—G.

[The best plant for such a hedge is *Pyrus Japonica*. It flowers as freely as a hedge of *Geraniums* would. It hardly ever makes a surface root to rob the border in front; the roots go very deep, with very few fibres; it will grow so close that a tomtit could scarcely get through, and it may be kept three feet, or four feet, or five feet high for any number of years. It may be seen in most of the established nurseries round London, or you may go down to Kingston and you will see there the most beautiful hedge of it that ever was seen in the nursery of the Messrs. Jackson.

The next best plant to divide a flower garden and lawn from the kitchen garden, in moderate-sized places, is the Kushmul Berberry (*Berberis Asiatica*). We saw a hedge of it planted before last Christmas, between the kitchen garden and flower garden, by two of Mr. Jackson's men. The tally said, "350 *Berberis Asiatica*," which made our "teeth water;" but before the end of the week the lady there sent word that enough for a hedge of these Berberry plants would be sent to the Experimental Garden. *Rhododendrons* are not applicable for "trimmed" hedges. The following, upon this hedge shrub, is extracted from the Horticultural Society's "Journal":—

"The Kushmul Berberry (*Berberis Asiatica*), found in all the mountainous country north of Hindostan, where it appears to be called *Kushmul*. It is correctly distinguished from the *Chitra*, or *B. aristata*, by Dr. Royle.

"This is the largest of the species in cultivation, growing quickly to the height of eight or ten feet, with pale, erect branches, rather small spines, and a beautiful lucid bright green glaucous foliage. The leaves are oblong, tapering to the base, and a good deal netted when old; as in all the Indian species they are toothed in various degrees, according to age or other circumstances; when toothed they invariably are scolloped as it were, and not serrated as in the *Chitra*. The flowers grow in very short, roundish, sessile racemes, scarcely projecting beyond the leaves, and are succeeded by clusters of dark purple, roundish berries, covered with a rich bloom like a plum. In India these are dried and sold as raisins, which they much resemble except in size. It is the best known of all the Indian Berberries, having been longest in cultivation, and in the south-west of England has become extremely common. Thousands of plants have been distributed by the Horticultural Society. Nowhere, however, has it been cultivated with so much success, or on so large a scale, as at Killerton, the seat of Sir Thomas Dyke Acland, Bart., from whose gardener, Mr. Craggs, came the following account:—

"About eighteen years ago I received a packet of seed of *Berberis Asiatica*, from which I raised about one hundred plants. After keeping them two or three years in the nursery I planted them out singly in different situations both at Killerton and Holmeote. The plants grew vigorously, were allowed to take their natural growth, and in a few years, at the latter place, began to seed. Being near the sea the late spring frosts did not kill the blossoms, and from those plants we have now for several years obtained many pounds of seed,

the plant being upwards of fourteen feet high, and as many in diameter.

"From the commencement of their ripening with us the seeds have been sown annually in drills or broadcast in beds in the open ground about the first week in March, in a light soil, letting them remain in the above situation until the spring after. I then plant them out in the nursery in rows, about fifteen inches from row to row, and about six inches from plant to plant. In two years they make fine strong bushes for permanent situations.

"Finding the plants to be free growers, nearly evergreen, and very strong, and raising many thousands per year, I began, by the desire of my employer, to plant them out for hedges, and they succeed particularly well either planted on banks or on the bare surface. The latter I can highly recommend for dividing allotments in cottage gardens, this Berberry being free from mildew; and it can be kept clipped with shears or shorn with a reap-hook to any width required.

"When planted on a bank it makes a beautiful hedge by cutting out with a knife the very luxuriant shoots about twice a year to within an inch or two from where they grow, allowing the side and weak growth to form the hedge. I have a hedge at Killerton so treated, which has been planted upwards of twelve years, and at this time is not more than four feet high and about the same width; and with the same treatment it can be kept to the same size.

"I should recommend in planting hedges to keep the plants a foot apart, and, if the hedges are to be kept shorn, in a single row; but if to be kept in the more natural growth, plant two rows, not more than one foot apart, and the plants the same, but put in alternately.

"When strong this Berberry is proof against any cattle. Last spring I planted a stout bush in the deer park without protection. They have battled it with their horns, but they have not killed it. It can be planted nearer a fence where cattle have access than any shrub I know.'

"It is indeed a most valuable plant, and hardy enough to defy the rigour of any frosts south of the Humber.

"Many varieties are to be found in gardens, but they are not different in important characters."

TREE CARNATION BUDS NOT OPENING.

"M. G.' would feel much obliged for some instructions how to grow the Tree Carnation. He has eighteen plants, all looking healthy, with plenty of flower-buds, but they will not open well. They are in good soil, and in a very warm greenhouse. At the same time any information as to sowing the seed, and the management of the *Portulaca*, would be thankfully received."

[You would see a notice lately, by Mr. Fish, on growing *Tree Carnations*, and in a previous volume there is a fuller account. Give them plenty of air in a warm greenhouse, and as they are liable to split the pod like the flower sent, place a soft string round it as it begins to open, and that will prevent the petals twisting. Some Pink and Carnation growers have small circular bands of India-rubber placed over the buds as the petals begin to peep.

The *Portulacas* do best when sown in sandy soil in a hotbed at the end of March, the seedlings to be hardened off by degrees, pricked out into pots, and either grown in the greenhouse or planted out at the end of May in a sunny, sheltered spot, and in poor, sandy soil. The more sun they have the better they will bloom.]

MAKING A HOTBED FOR ANNUALS.—DESTROYING WOODLICE.—SPACE UNDER GREENHOUSE SHELVES.

"A CONSTANT SUBSCRIBER' would thank THE COTTAGE GARDENER to inform her of the best time to make a hotbed to raise early flower seeds, and to say if a hotbed made according to the directions in the number for May 6th, 1856, would be improved, and prevent woodlice, by placing a layer of quicklime over the manure, and upon that ashes? All her seeds were eaten by the woodlice last year. There have been inquiries made as to the using the space under the greenhouse plant-stand. She has had lining muslin, at

threepence or fourpence per yard, stretched on the under part of the shelves, and oiled thrice. This answers uncommonly well, being waterproof, and preventing drip, and when the plants are newly potted, placing them there for three or four days prevents them flagging."

[You cannot do better than make your bed according to the directions referred to. Make it early in March. The quicklime will be no security against woodlice. Until it becomes mild the lime will protect from worms, slugs, &c. If the bed is made in a fresh place you will be more free from woodlice. If they still get in, the best security is to have a space a few inches wider round the sides of the bed, and made smooth with dry ashes; the ashes, &c., in which the plants are plunged may be kept damper. Lay a little dry hay, moss, or any other handy stuff on the dry ashes round the side of the bed, and thither the enemy will retreat. At breakfast-time have a pot of boiling water, and a small pot with a fine rose to it. Lift the covering carefully and quietly with one hand, and sprinkle the intruders with boiling water with the other. Place also pieces of carrot in small pots filled with moss, and they will go there to feed. The managing of the stage is good, but do not keep your plants there too long.]

TO CORRESPONDENTS.

EXCLUDING CATS (*J. M.*).—As you do not like to destroy these intruders into your garden, and if the garden is come-at-able *only* through the quickset hedge, put galvanised wire netting, eighteen inches high, close into the hedge, and pegged down into the soil at bottom. It might be fastened by galvanised wire to the stems of the quick.

REMOVING GARDEN PLANTS AND BULBS (*Zero*).—The moment a plant or bulb of any kind is inserted in the soil it belongs to the landlord, and cannot be taken away, or even moved, without his leave. This is the strict law of the case. Every in-coming tenant should have a written agreement with his landlord upon the subject. If the tenant is a nurseryman or market gardener the law is different.

GARDEN PLAN (*An Amateur, Lincoln*).—The centre part from 1 to 9 is the commonest figure in our books; but not the worse for that. The outline of 14 and 15 will not tell on the ground as on paper. They will look like circles in summer at a short distance; but there is no positive objection to the arched outline: 10 and 11 on the left, 10 and 12 and 13 on the right, are by far too small in proportion to 14 and 15 to stand *across* the view, and 16 and 17 ditto, therefore draw in the two ends pinchingly. Were 16 and 17 to be as large, or nearly so, as 1, 15, and 16, and a little farther from them, they would be a better finish. If two circles were made on either side of 10, and 10 done away with, the same with 11 and with 12 and 13, they would improve the plan.

SALVIA VOLTAIREANUM.—PITCHER PLANTS.—*ASCLEPIAS TUBEROSA* (*Amateur*).—We never heard of such a *Salvia*; but all *Salvias* do best from young slips or cuttings early in spring; but the old plants need not be thrown away after this season, as the worst is over now, and they will come in somewhere no doubt; but we think the name is fictitious. At all events, without knowing the kind, no one can say whether it is best to cut the plant down, or "merely to prune it in," as that depends on the kind. Mr. Beaton did not "mean to say that *Pitcher plants* were growing in the open air," or else he would have said it. Probably the *Pitcher plants* you allude to are "hothouse plants;" but all *Pitcher plants* are not so; for example, those that are now very deep under the snow in Canada. *Asclepias tuberosa* is one of the best of the good old hardy, or rather, very ticklish half-hardy plants. The best we ever saw of it was in the garden of Mr. Maund, at Bromsgrove, near Worcester, in 1834 or 1835. It was growing on rockwork under a west wall, if we recollect rightly. We would advise young plants of it to be kept in a cold frame, as it is very liable to damp off in the winter.

WILKINS'S SYSTEM OF CULTIVATION.—A *Subscriber* asks what is this "system?" It is applying liquid manure to the roots below the surface by means of pipes. Our correspondent inclosed the following:—"Several gentlemen from London and other parts (says the *Reading Mercury*), have visited the experimental garden in the Caversham-road, to inspect the various articles of agricultural produce, as grown on the new system advocated by Mr. Wilkins. The results of the inspection appeared to be perfectly satisfactory. Some Hops from cuttings of last spring, under the new system of culture, reached a height of eleven feet, and bore luxuriantly, while some by their side, under the old system, were very poor, only one pole having any Hops, while on some others the bine had not reached the pole. These will be allowed to remain during the winter, so that any one who feels disposed may inspect them. Some Celery, Carrots, and Parsnips were shown which measured respectively 14, 10, and 13 inches in girth, being about double the size of those grown on the old plan. The Potatoes grown on the new system were not only much larger, but less affected with the disease than the others. The Wheat, Beans, and Peas were also nearly double in yield to that grown on the common plan. But it was upon bread and wine, the former made from a mixture of Mangold Wurtzel and flour, and the latter from the Mangold alone, that Mr. Wilkins chiefly prided himself. The bread is certainly edible, and doubtless very nutritious, sweet to the taste, light, but possessing more moisture than that made from Wheat alone. The wine was only three weeks old, and could not therefore be considered a fair specimen; it possesses abundant saccharine matter,

and, in all probability, after being kept a short time, will make a very pleasant drink. Its price, according to Mr. Wilkins, will be astonishingly low (6d. a quart), and a wine manufacturer who was present expressed himself much pleased with it. It is stated that a company is in the course of formation, for the purpose of applying the advantages of the new system of culture to the country at large, as it is almost impossible, unless there is a vast increase in the yield of Mangold Wurtzel, that it can be grown in sufficient quantities to meet the demand which it is anticipated will be made for it for the manufacture of wine and bread."

VINE FORCING (J. H.).—With a temperature in the morning at 55°, and that of the border 62°, your Vines ought to do well so far as heat is concerned. If the stems are outside they ought to be covered with hay-bands, or otherwise protected from cold.

ORCHARD IN THE FENS (A Voice from the Fens).—We suspect, from the nature of your soil and subsoil, yours is not a situation for an orchard. By orchard we mean standard trees. You say the soil is not much more than a foot deep, and the subsoil a hot, burning gravel. The fact is, the trees having been planted for fifteen years, the roots have penetrated into the gravel, and the trees have become cankered and gnarled. Your only remedy is to lay the roots bare, without disturbing them more than is necessary, cut off all that have penetrated into the gravel, and supply those that are left with a few barrow-loads of fine, mellow soil from the top spit of an old pasture, mixed with decomposed vegetable matter and well-rotted farm-yard manure, that of cows or oxen being the best. Keep the roots as near the surface as you can, prune off all the cankered shoots, and plaster up the cankered spots on the bark of the branches with a tough paste made of cowdung, lime rubbish sifted, and loam, and we have no doubt another year's growth will amply repay you the trouble you have been at.

PEAR TREE (Vincent Litchfield).—Your tree has too much vigour at the roots. Possibly you were too kind to it when you planted it; for you must remember young fruit trees are like young children, and must not be too richly fed. The best thing you can do is to uncover the roots, without disturbing them any more than you can help, cut off the long, strong, and very vigorous of them, and make a bed of lime rubbish and brickbats below them, keeping those that are left as near the surface as you can. Your intention to point and grey wash the old wall are good, and should be carried out. The small labiate flower growing in the wall joints is *Linaria cymbalaria*, and ought to be removed.

NAMES OF FERNS (T. T.).—Your Lycopods and Ferns are as follow:—

- | | |
|------------------------------|------------------------------|
| 1. Lycopodium caesium | 6. Asplenium adiantum nigrum |
| 2. " denticulatum | 7. Polypodium vulgare |
| 3. Pteris serrulata | 8. Asplenium trichomanes |
| 4. Adiantum capillus Veneris | 9. Polystichum aculeatum |
| 5. " cuneatum | 10. Scolopendrium vulgare |

THE POULTRY CHRONICLE.

POULTRY SHOWS.

CREWE. February 3rd and 4th, 1857. Secs. S. Sheppard and D. Margelts, Esqs. Entries close January 15th.

KENDAL. At Kendal, February 6th and 7th, 1857. Sec. Mr. T. Atkinson.

LIVERPOOL. January 28th, 29th, and 30th, 1857. Secs. Gilbert W. Moss, Esq., and William C. Worrall, Esq., 6, Lower Castle-street. Entries close on the 10th of January.

SOUTH EAST HANTS. At Fareham, January 26th and 27th, 1857. Sec. Mr. James James. Entries close January 14th.

N.B.—Secretaries will oblige us by sending early copies of their lists.

CRYSTAL PALACE POULTRY EXHIBITION.

(From another Reporter.)

THE Crystal Palace, notorious as it has ever been for the variety of its attractions, has just offered another feature to public favour, in the shape of a Poultry Show, that has scarcely ever been exceeded throughout the United Kingdom. The policy of this additional charm will be best attested by the simple fact that, on Saturday (the first day the Exhibition was opened to the public), the attendance, although "the half-crown day," amounted in the aggregate to 4,944 visitors. It is needless to comment at length on this matter, but certainly it gives the most cogent refutation possible to the impression current among some parties, that the national taste for first-rate poultry was declining. Much, and the greatest credit, is undoubtedly due to the Committee who superintended this unprecedented department in Crystal Palace novelties. Everything was done efficiently and regardless of outlay, whilst the most liberal of prize-lists called together the competition of all the principal breeders and amateurs of poultry throughout the land. It is really a most interesting subject to peruse the list of the competitors, and to thus ascertain the immense distances some of the specimens had travelled to enter the lists against more conveniently located rivals. A reference to the names of the successful ones will likewise fully repay the personal trouble of our readers, and, at the same time, fully convince them

that at no former show have the premiums been so widely and diversely spread throughout the country. It would be useless to detail minutely the peculiar aptitude of the Palace for the purposes to which on this occasion it was appropriated. On this point it stands unrivalled, possessing alike perfection of daylight, and the most entire freedom from draughts of any kind; the poultry, consequently, appeared far more happy and comfortable than is usual on such occasions. In the pens themselves two very novel improvements were apparent, even at a glance, to all visitors. They are all much higher at the front than at the back part, whilst being coloured throughout internally a light neutral grey tint, and the front edges white, by way of relief, the poultry appeared to unprecedented advantage; besides, the comparatively restricted accommodation of the rear portion of each pen caused the poultry *voluntarily* to present themselves continuously towards the spectators. This really easily-attained desideratum is certainly well worthy of the careful attention of our poultry associations generally. Nothing could aid general appearances in producing "first impressions," and favourable ones too, more than the changes alluded to. Determined that nothing should be wanting to secure the success and satisfaction of both the visiting public and competitors generally, the managers retained the services of those long-practised arbitrators, Messrs. Andrews, Baily, and Hewitt; and no doubt exists that these gentlemen have but rarely if ever found a more universal and keen competition awaiting their final decisions. We have heard that daylight had long declined before the ultimate completion of their arduous duties. This may, at least, be partially accounted for from the fact that the uniformity of light, combined with the peculiar construction of the pens themselves, developed equally the good and the unfavourable qualities of the opponent birds with extreme intensity before the Judges. Thus faults hitherto hidden, and good features beforetimes unseen, were canvassed and exposed with an accuracy that, were it attainable, would be most desirable on all like occasions. Mr. William Houghton certainly well deserves the credit so generally awarded him for the untiring industry and truly indefatigable perseverance he displayed in catering both for the comforts of the birds themselves, and the multitudes of visitors who have been induced to visit the Crystal Palace through the introduction of this novel attraction.

The attendance of the nobility was very numerous indeed, and their expressions of gratification were general, whilst, by referring to the catalogue, the names of many among them will be found as competitors. We will now briefly refer to the poultry itself. The *Spanish* fowls were very good, and the chickens of this highly-prized variety were even somewhat superior to the adult specimens; still it undoubtedly occurred to ourselves that the majority of these groups scarcely displayed so perfect an amount of *condition* as when exhibited at Birmingham. The *Grey Dorkings* were certainly not equal to our preconceived impressions; the *White Dorkings*, on the contrary, were decidedly above mediocrity. The *Game fowls* presented long ranges of perfection and general excellence; they were a very decided feature in the Exhibition. The *Malays* were superior, and all four of the varieties of *Hamburghs* were well represented. The *Polands* were a combination of the very best specimens for *plumage* in the land; but, as is at the present day too frequently the case, many decidedly *deformed* birds marred the pretensions to success of their owners. The *Turkeys* evidenced how very greatly they have been improved of late years by the inducements held out by societies like the one we are speaking of; and the like holds good, with equal force, in regard to each separate description of aquatic poultry. They were, as a whole, especially good. Considering the exceedingly limited space of time the Crystal Palace "arrangements" have been placed before the public, it is absolutely astounding the immense and valuable collection that has been called into competition. We are informed that other meetings of like character will ensue, and we heartily wish them all the success their originators could themselves desire.

RULES FOR SALES AT POULTRY SHOWS.

THE statement of your Colchester reporter, that the plan of sales adopted by the Essex Association at their Exhibi-

tions is "scarcely satisfactory, and contrary to the general usages of Poultry Societies," is, as to the latter part of it, perfectly true; but so far from its being "scarcely satisfactory," it is considered one of the greatest improvements yet made in the rules for sale offices of Poultry Shows.

I am a member of this Association, and a large exhibitor at its Shows, and I am, consequently, much interested in its welfare, and, knowing the great influence for evil which such an observation may have on those interested in poultry, who read a periodical of so much weight on such matters as *THE COTTAGE GARDENER* is known to be, especially as it receives a sort of *quasi* authority from being under the hand of your reporter, I at once say that I believe the former part of the above statement to be "simply untrue," so far as exhibitors and fair purchasers are concerned; and if the Association lasts until this its very salutary rule is abolished, your reporter will certainly, should he be so inclined, and be able to do so, have an opportunity of making his notes on the Essex Association's Meetings for many years to come.

The present general usage of shows on this point is so notoriously bad as to make it almost unnecessary to remark upon it. It is well known to all Judges and exhibitors that at some shows pens have been claimed *before* the admission of the public at all. Indeed, I have been informed of transactions even at Birmingham which were so disgraceful, I might say, so infamous, to the parties concerned in them, and which could not have occurred had some such rule as that adopted by our Association been in force, that I am extremely surprised to find any one in the habit of attending Poultry Shows, and who really desires their prosperity, in any way seeking to throw cold water on an endeavour so laudable as that which seeks to prevent an evil from which Committees, non-members of Committees, exhibitors, and purchasers, have hitherto alike suffered; Committees, because they do not get, as they might, the increased per centage on the sale of the birds where there are several willing to purchase; exhibitors, because they do not obtain the real value of their birds, which is what they will fetch; and purchasers, because it is well known that birds worth buying are often, when the public are admitted, found to be already sold. *How* this latter thing happens it is not for me to surmise; it is sufficient for the purpose of showing the advantage of our rule that the fact itself cannot be denied, and I have no doubt whatever that exhibitors will, for the future, insist on some better regulation on this point than that now in general use, and your readers will, I am convinced, without a dissentient voice, join with me in adding—not before it is time.—ZENAS.

[We quite agree as to the desirableness of checking the unfair preference in effecting purchases, obtained, in many instances, at Poultry Shows. To prevent it requires great energy and firmness in Secretaries. The following is the rule of the Essex Association referred to by our correspondent:—

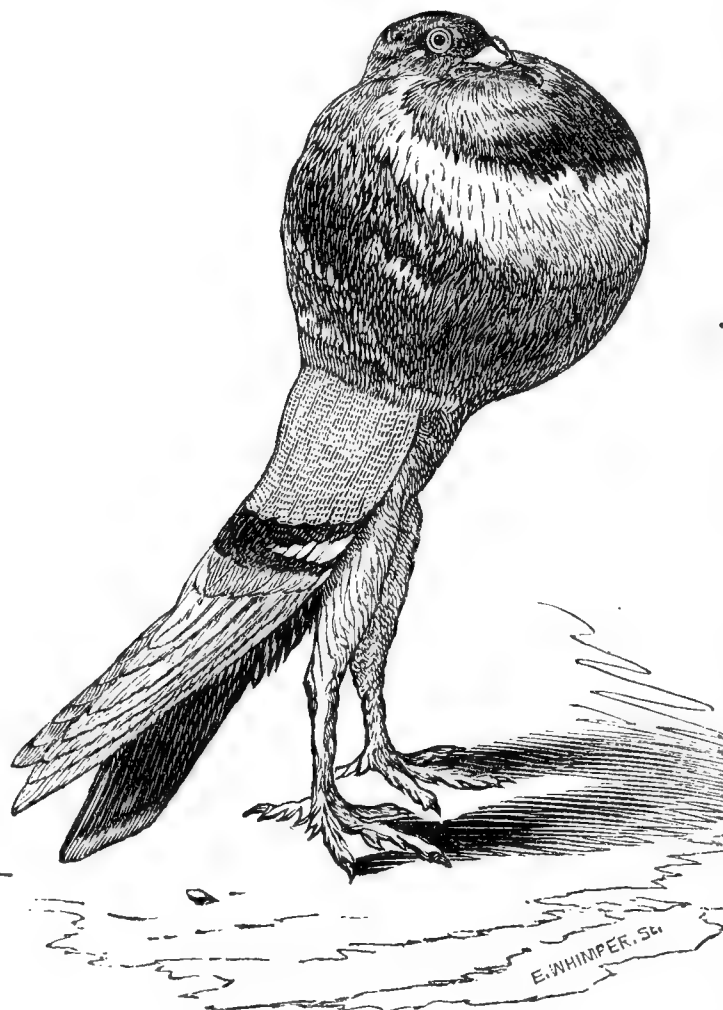
"7. Exhibitors wishing to sell their birds must state in the Catalogue, *separately*, the price of the cock, the two hens, and the three birds together, *including the price of basket or package*. ALL SALES MUST BE MADE THROUGH, OR REPORTED TO, THE SECRETARIES, and 10 per cent. will be deducted by them from the purchase money, to be added to the general funds of the Society. All birds may be claimed at the prices named in the Catalogue, at the *Secretaries' Offices*, immediately upon the opening of the Exhibition; but no sale will be effected till twelve o'clock at noon on THURSDAY, January 8th, when, in the event of there being more than one claimant for any bird or birds, the Secretaries will dispose of such birds to that claimant who may offer the highest sum in advance of the price named in the Catalogue, and such additional sum will be duly accounted for to the vendor. But all birds after the day and hour above-named will be at once sold to the first claimant at the price named in the Catalogue. Purchasers of parts of pens must provide baskets at their own cost. Immediately after the sale has been effected the birds will remain at the sole risk of the purchaser. At the close of each day's Exhibition the Secretaries will advise Exhibitors if any of their birds be sold, and a cheque will be sent to them for the amount of sales (less 10 per cent.) on or before January 14." "ZENAS" is a well-known, honourable exhibitor, and we suggested to him that the above rule takes away from those

who can only visit the Show the first day the opportunity of being purchasers, and he agrees with us in thinking that this ought to be altered. He suggests, and we think wisely, that sales might be permitted after a late hour on the first day. Whoever has the care of the sale office must allow no influence to induce him to give a preference to any purchaser. It must be "first come first served," and then "the first highest offer to be accepted."]

PIGEONS.

CLASS No. 2, VARIETY 4.—THE ENGLISH POWTER

(*Columba gutturosa Anglicana*, MOORE).



THIS handsome variety of Pigeons, so especially a favourite with many fanciers, is believed to be an English production, bred from a cross between the Dutch Powter and a Horseman or Carrier, and so bred over to the Powter till no visible trace of the Wattled Pigeon remains. Like the Carrier, they belong to what is called the high fancy, on account of the great pains and trouble which many are at to preserve the breed in all its beauty, and breed them to perfection.

They are tall and stately, though rather slight-made birds; the beak is long, the head smooth, the crop large, round, and well blown out, the legs long, and covered with short feathers; the wings and tail are also long, and the carriage very erect. Their genuine colour is blue pied; but pids of all colours are frequent, and also quite white birds. They are generally bad nurses; but, being of much value, the young are mostly raised under other Pigeons.

Being strictly fancy Pigeons, like all other things of *vertu*, rules are laid down as regards their points and properties, of which I condense the following:—

First, and of the greatest importance, is the crop, which must be large and round, reaching up to the beak, passing round the neck, and resting on the shoulders, so as to form the best globe or ball.

The next property or properties are length of body and legs; the greatest length of body from the tip of the beak to the end of the tail, and of the legs measured from the knee joint to the end of the toe-nail.

Shape consists in wide shoulders, hollow back, and slender waist, the body tapering off from the shoulders to the tail, so as to give a fine form; the legs straight, stout, and clothed in small white feathers to the toes, or stockinged.

Carriage is best observed when the bird is showing or playing, and consists in its deportment. Its carriage must be dignified and erect, with the crop well blown out, neither too stiff nor too slack; its legs must be kept from straddling, and it should walk with a mincing gait, spreading the tail like a fan without ruffling the body feathers.

And lastly, feather: this consists not only in the bird being in full plumage, but also in the colour and marking. The general feathers should be dark, either blue, black, red, or yellow, pied with white, as follows:—On the front part of the crop should be a white half-moon or crescent-shaped patch, a few white feathers among the lesser wing coverts disposed in a rose or crescent form, and from seven to ten of the extreme pinion feathers white in each wing; also the thighs and legs must be white. In the red and yellow piers they are permitted to have white tails, on account of the difficulty of breeding these colours from blue, which is their chief colour, with good red or yellow tails. Of the four colours blue pied is the most universal; black pied, red pied, and yellow pied are, consequently, to be preferred in order of their rarity, provided they are equally well marked.

Perfection is a quality rarely obtained, and so it is that the best birds are frequently deficient in some respect or other. A few of their faults, with their technical names, are as follow:—If the Powter rarely inflates his crop, but lets it hang loosely about his chest, he is said to be slack-winded, and this is a great fault; should he, on the other hand, blow out his crop so full as to inconvenience himself or lose command of his actions, it is termed stiff-winded; if the legs are thin, and destitute of feathers, they are said to be spindle-shanked; if, on the contrary, rushed or covered with large, coarse feathers, they are said to be flag-thighed; if the back rises instead of being hollow, it is called hogged-backed; if in playing he raises the feathers on his back, it is called rumping, which is disliked, as well as his sweeping the ground with his tail, straddling, or tucking it between his legs, or jumping.

With respect to plumage the following are blemishes:—If there is no dark patch descending from the bill, so that the crop is all white in front, it is called swallow-throated; if the white extends round the neck, he is called ring-headed; if there is an excess of white on the wing, so as to leave a white slur below when the wing is closed, it is called bishoped or lawn-sleeved; if, on the contrary, the dark colour extends too far up the pinion, they are foul-flighted; if a dark feather occurs near the extremity, it is said to be sworded; dark feathers on the thighs or legs would be designated foul-thighed. The least esteemed colours are mealy and grizzled: pure white are admired by a few.

Much pains are taken by the breeders and fanciers of this variety by carefully keeping their pedigree so as to prevent pairing relations, by which they avoid degeneracy, and also by carefully matching them so as to prevent both parents having the same blemishes. During the winter the cocks and hens are separated, and as they are negligent parents, owing much to their artificial state of breeding, the young are mostly reared by other and more attentive nurses, which are kept on purpose, the Powters being supplied with eggs to sit on, and a young one a few days old at hatching time to feed off their soft meats, and to prevent their laying again too soon, which would weaken and soon kill the hen. Size and vigour being requisite for the perfection of a Powter, they would soon be spoiled by degeneracy from in-and-in breeding or incestuous matching. Numerous as Powters are, but few come near to a standard of excellence. Many very good-carriaged little birds are to be met with. Some call these Powting Horsemen, but I regard them simply as the Powter less highly bred. Again, if a Powter is large, and has not other good qualities, it is not unfrequently also passed off as a Powting Horseman; not that it shows any affinity to the Horseman, but simply because it is not first-rate.—B. P. BRENT.

AN EGG HARVEST.

If you consider the following account of the management and produce of a small poultry-yard suited to your pages it is at your service.

On the 1st of January, 1856, my stock of poultry consisted of three one-year-old pure white-faced Spanish hens; two seven-months-old pullets, Spanish hens; three seven-months-old pullets, bred between my Spanish cock bird and a black Cochon hen, borrowed for the purpose of experiment. Total, eight layers.

Their produce, noted day by day, has been as follows:—January, 132 eggs; February, 144; March, 173; April, 170; May, 108 (one sitting); June, 132; July, 71 (two sittings); August, 100; September, 110; October, November, December, 60 (not regularly noted, but certainly above 60). Total, 1200 eggs, being 150 each hen. But my wife, who has more to do with the poultry than myself, considers that the following statement approximates nearer to the truth, viz.:—The three half-bred pullets, 180 eggs each, 540; five pure Spaniards, 132 each, 660. Total, 1200.

I am much disposed to endorse this opinion from my own knowledge, and I must further state that the half-bred pullets commenced laying at five months and a half old, whereas the pure Spanish did not do so until seven months old.

Certain it is that birds bred as above described are enormous layers. They possess, moreover, a handsome glossy plumage, are of large size, short and clean legged, good mothers, and excellent on table; in a word, I cannot imagine a more useful cross for the farmer or non-exhibiting amateur. What the effect of another cross back to Spanish blood will be I shall try this year.

I have only to add that our poultry is kept in a good-sized inclosed yard, and fed regularly three times a day with barley, besides receiving three or four days a week a fair supply of green food in the shape of garden refuse.—H. D., Penzance.

NOTTINGHAM CENTRAL POULTRY EXHIBITION.

IN addition to the prizes allotted to Poultry, of which we published the list last week, the following prizes were awarded for Pigeons, Canaries, and Rabbits:—

PIGEONS.—*A Silver Cup, of the value of Five Guineas, for the best Three Pens of Almond Tumblers, Carriers, and Powters.* Mr. F. Bottom, Sherwood Hill, Notts. *A Silver Cup of the value of Five Guineas, for the best Four Pens of any variety.* Mr. F. Bottom, Sherwood Hill, Notts. (Fantails, Owls, Trumpeters, and Jacobins.) *Powters.*—First, Mr. G. J. Horner, Charlotte Street, Hull. Second, Mr. E. A. Lingard, Snow Hill, Birmingham. Commended, Mr. C. Titterton, Birmingham. *Almond Tumblers.*—First, Mr. J. Percival, Clent Villa, Harborne, near Birmingham. Second, Mr. F. Bottom, Sherwood Hill, Notts. Highly Commended, Mr. E. A. Lingard, Snow Hill, Birmingham. *Carriers.*—First and Second, Mr. J. Percival, Clent Villa, Harborne, near Birmingham. *Barbs.*—First, Mr. J. Percival, 13, Walworth Row, Walworth, Surrey. Second, Mr. T. George, Normanton, near Derby. Commended, Mr. J. Percival, Clent Villa, Harborne, near Birmingham. *Runts.*—First, Mr. E. A. Lingard, Birmingham. Second, Mr. F. Bottom, Sherwood Hill, Notts. Commended, Mr. F. A. Lavender, Biddenham, near Bedford. *Fantails.*—First, Mr. H. Simpson, Swan Street, Kettering, Northampton. Second, Mr. T. J. Cottle, Pulteney Villa, Cheltenham. *Jacobins.*—First, Mr. T. J. Cottle, Pulteney Villa, Cheltenham. Second, Mr. H. Weir, Lyndhurst Road, Peckham, Surrey. *Turbits.*—First, Mr. H. Weir, Lyndhurst Road, Peckham, Surrey. Second, Mr. A. P. Presdee, Belgrave Street, Birmingham. *Nuns.*—First, Mr. J. B. Edge, Aston New Town, Birmingham. Second, Mr. T. Twose, Bridgewater, Somerset. *Archangels.*—Second, Mr. F. Bottom, Sherwood Hill, Notts. Second, Mr. C. R. Titterton, Birmingham. (First prize withheld). *Trumpeters.*—First, Mrs. S. Beilby, Angel Lane, Beverley. Second, Mr. T. Twose, Bridgewater, Somerset. (A good class.) *Owls.*—First, Mr. G. Robson, Saville Street, Hull. Second, Mr. J. Billyeald, Hyson Green, near Nottingham. Commended, Mr. F. Bottom, Sherwood Hill, Notts. *Dragons.*—First, Mr. W. Appleby, Station Street, Burton-upon-Trent. Second, Mr. T. J. Cottle, Pulteney Villa, Cheltenham, Gloucestershire. (Many of this class Horseman bred.) *Bald Heads.*—First, Mr. J. B. Edge, Aston New Town, Birmingham. Second, Mr. H. Weir, Lyndhurst Road, Peckham, Surrey. Commended, Mr. E. A. Lingard, Snow Hill, Birmingham. (An extraordinarily good class.) *Beards.*—First, Mr. F. Bottom, Sherwood Hill, Notts. Second, Mr. J. Percival, 13, Queen's Row, Walworth, Surrey. *Mottled Tumblers.*—First and Second, Mr. J. Percival, Clent Villa, Harborne, near Birmingham. Commended, Mr. F. Bottom, Sherwood Hill, Notts. *Any other new or distinct breed.*—The prizes withheld.

CANARIES (Yellow pure and clear Belgians).—First, Mr. W. Brown, Great Hampton Street, Birmingham. Second, Mr. J. Tattersall, North Moor Toll Bar, Oldham, Lancashire. Third, Mr. W. Phillips,

Church Street, Old Basford, Nottinghamshire. *Buff pure and clear Belgians*.—First, Mr. W. Brown, Great Hampton Street, Birmingham. Second, Mr. J. Brown, Great Hampton Street, Birmingham. Third, Mr. J. Carnelly, Park Street, Nottingham. *Jonque London Fancies*.—First, Mr. W. Arthur, Peter Street, Soho, London. Second, Mr. F. Hook, Amelia Street, Walworth Road, London. Third, Mr. J. Waller, Tabernacle Walk, Finsbury, London. *Mealy London Fancies*.—First, Mr. F. Hook, Amelia Street, Walworth Road, London. Second, Mr. W. Arthur, Peter Street, Soho, London. Third, Mr. J. Waller, Tabernacle Walk, Finsbury, London. *Golden-spangled Jonque Lizards*.—First, Mr. T. Mason, Commerce Street, Nottingham. Second, Mr. H. Shaw, Ilkeston, Derbyshire. Third, Mr. J. Tattersall, North Moor Toll Bar, Oldham, Lancashire. *Silver-spangled Mealy Lizards*.—First, Mr. H. Shaw, Ilkeston, Derbyshire. Second, Mr. W. Williams, Walnut Tree Lane, Nottingham. Third, Mr. T. Mason, Commerce Street, Nottingham. *Yellow Variegated Belgians*.—First, Mr. J. Varley, surgeon, Burton Street, Nottingham. Second, Mr. J. Bryan, Friesland, Radford, Nottingham. Third, Mr. S. Wragg, Highurst Street, Radford, Notts. *Buff Variegated Belgians*.—First, Mr. J. Widdowson, North Gate, New Basford, Notts. Second, Mr. E. Shaw, Ilkeston, Derbyshire. Third, Mr. T. Stapleton, High Street, Old Basford, Notts. *Jonque Goldfinch Mules*.—First, Mr. J. Smith, High Street, Hull. Second, Mr. J. Bryan, Friesland, Radford, Notts. Third, Mr. W. Williams, Walnut Tree Lane, Nottingham. *Mealy Goldfinch Mules*.—Prize, Mr. J. Smith, High Street, Hull. *Jonque Linnets*.—First, Mr. J. Etherington, jun., Notintone Place, Sneinton, near Nottingham. Second, Mr. S. Wragg, Highurst Street, Radford, Notts. Third, Mr. J. Smith, High Street, Hull. *Mealy Linnets*.—First, Mr. J. Etherington, jun., Notintone Place, Sneinton, near Nottingham. Second, Mr. S. Wragg, Highurst Street, Radford, Notts. Third, Mr. J. Bryan, Friesland, Radford, Notts.

RABBITS (Long Ears).—First and Second, Mr. Percy Boulton, Beverley (19½ in.). *Any other variety*.—First, Mr. J. Bacon, Bottle Lane, Nottingham (15 lbs.). Second, Mr. W. H. Malpas.

PRESTON POULTRY EXHIBITION.

THIS was held at Preston on the 21st and 22nd instant. The following prizes were awarded. We shall have to publish some curious proceedings relative to it next week.

SPANISH.—**SILVER CUP**, J. Busst, jun., Walsall. Second, J. Howard, Tarleton. Commended, Miss J. Grimshaw, Swinshaw, near Rawtenstall. (Whole class unusually good.) *Chickens of 1856.*—**SILVER CUP**, W. W. Brundrit, Churchfield House, Runcorn. Second, W. Newsome, Heckmondwike, Yorkshire. Highly Commended, Miss M. L. Rake, Brandon Hill, Bristol; G. Fell, Warrington; Captain W. Hornby, Knowsley Cottage, Prescott; G. Botham, Wexham Court, Slough, Bucks; J. C. Forrest, Lower Darwen; J. Howard, Tarleton. Commended, Miss J. Grimshaw, Swinshaw, near Rawtenstall; B. Jackson, Irwell House, Prestwich, near Manchester; G. A. Geldard, Aikrigg End, Kendal. (The Spanish Chicken class equally praiseworthy with the adults of this variety.)

DORKING (Coloured).—**SILVER CUP**, J. L. Wright, Highfield House, Runcorn. Second, J. Robinson, Vale House, near Garstang. Highly Commended, E. Owen, Highgate, Kendal; Captain W. Hornby, Knowsley Cottage, Prescott; J. Copple, Eccleston, Prescott. Commended, Miss J. Grimshaw, Swinshaw, Rawtenstall; E. Lister, Cassia Lodge, Northwich, Cheshire; R. Blackburn, Edward Street, Preston. (This class good.) *Chickens of 1856.*—**SILVER CUP**, Captain W. Hornby, Knowsley Cottage, Prescott. Second, T. Ullock, Quarry House, Windermere. Highly Commended, W. Brown, Preston; F. B. Walker, Victoria Road, Douglas, Isle of Man; E. Lister, Cassia Lodge, Northwich, Cheshire; J. Robinson, Vale House, near Garstang; J. Copple, Eccleston, Prescott; J. Smith, Henley in Arden; W. Wilding, Montford, near Burnley; W. Bownass, Royal Hotel, Bowness; Major Thursby, Ormerod House, Burnley. Commended, W. Bownass, Royal Hotel, Bowness, Windermere; Right Honourable C. H. Lindsay, Haigh Hall, Wigan; Miss J. Grimshaw, Swinshaw, near Rawtenstall; W. Brown, Preston; J. C. Forrest, Lower Darwen. (An excellent class throughout.)

DORKING (White).—**SILVER CUP** and Second Prize, J. Robinson, Vale House, near Garstang.

COCHIN-CHINA (Cinnamon and Buff).—**SILVER CUP**, G. A. Geldard, Aikrigg End, Kendal. Second, T. Stretch, Marsh Lane, Bootle, Liverpool. Highly Commended, T. H. Barker, Havingham, Yorkshire; Miss V. W. Musgrove, Aughton, near Liverpool; T. Burnett, Hutton. (The class good.) *Chickens of 1856.*—**SILVER CUP**, R. Surgenson, 8, Chester Street, Liverpool. Second, W. Copple, Eccleston, Prescott. Highly Commended, T. Stretch, Marsh Lane, Bootle, Liverpool; H. Morton, Cecil Place, Georgianna Street, Mosses, Bury; J. Robinson, Vale House, near Garstang; Mrs. M. Watkin, Freedom Cottage, Walkley, Sheffield. Commended, T. Hincks, Penkridge, Staffordshire; G. C. Peters, Moseley, near Birmingham.

COCHIN-CHINA (Brown and Partridge-feathered).—**SILVER CUP**, P. Cartwright, Oswestry. Second, J. Jolly, jun., Wray Green. Highly Commended, G. C. Adkins, West House, Edgbaston, near Birmingham. Commended, W. Wanklyn, jun., Green Bank, Bury, Lancashire. (A good class.) *Chickens of 1856.*—**SILVER CUP**, P. Cartwright, Oswestry. Second, W. Wanklyn, jun., Green Bank, Bury, Lancashire.

COCHIN-CHINA (any other colour).—**SILVER CUP**, R. Chase, Moseley Road, Birmingham. Second, W. Copple, Eccleston. Highly Commended, J. M. Barnes, Levens, near Kendal. *Chickens of 1856.*—**SILVER CUP**, Mrs. M. Watkin, Freedom Cottage, Walkley, near Sheffield. Second, R. Chase, Moseley Road, Birmingham. Highly Commended, W. Wanklyn, jun., Green Bank, Bury, Lancashire. Commended, F. W. Earle, Edenhurst, Prescott; W. Copple, Eccleston, Prescott.

BRAHMA POOTRA (Pencilled).—**SILVER CUP**, R. Teebay, Fulwood, near Preston. Second, G. Botham, Wexham Court, Slough, Bucks.

Chickens of 1856.—**SILVER CUP**, G. Botham, Wexham Court, Slough, Bucks. Second, P. Catterall, the younger, Whittingham House, near Preston. Highly Commended, Miss M. E. Tong, Beckingham Hall, Gainsbro', Lincolnshire.

BRAHMA POOTRA (Light).—**SILVER CUP**, R. Teebay, Fulwood, Preston. *Chickens of 1856.*—**SILVER CUP** and Second Prize, R. Teebay, Fulwood, near Preston.

PHEASANT OR HAMBURGH (Golden-pencilled).—**SILVER CUP**, J. B. Chune, Coalbrook Dale, Shropshire. Second, W. C. Worrall, Rice House, Knotty Ash, near Liverpool. Commended, Mrs. Parkinson, Knapthorp, Southwell, Notts. *Chickens of 1856.*—**SILVER CUP** and Second Prize, W. Banks, Weston House, Runcorn, Cheshire. Highly Commended, G. C. Adkins, West House, Edgbaston, Birmingham. Commended, F. B. Walker, Victoria Road, Douglas, Isle of Man; W. C. Worrall, Rice House, Knotty Ash, near Liverpool; G. Botham, Wexham Court, Slough, Bucks; R. Swift, Southwell, Notts; D. Harrison, Singleton Park, Kendal; G. B. Dyer, Radcliffe Moor, Manchester.

PHEASANT OR HAMBURGH (Silver-pencilled).—**SILVER CUP**, W. Wright, West Bank, Widnes, Warrington. Second, J. Dixon, North Park, Horton, near Bradford. Highly Commended, Mrs. Parkinson, Knapthorp, Southwell, Notts. Commended, G. Fell, Warrington. (This class good.) *Chickens of 1856.*—**SILVER CUP**, Mrs. H. Sharp, Mill Lane, Bradford, Yorkshire. Second, J. Dixon, Bradford. Highly Commended, G. Potter, Fallowfield; W. C. Worrall, Rice House, Knotty Ash, near Liverpool; Messrs. Bird and Beldon, Eccles Hill Moor, near Bradford; W. Maude, Victoria Place, Bingley, Yorkshire. Commended, F. B. Walker, Victoria Road, Douglas, Isle of Man; W. Chorley, Warrington. (This class very good.)

PHEASANT OR HAMBURGH (Golden-spangled).—**SILVER CUP**, G. Fell, Warrington. Second, W. C. Worrall, Rice House, Knotty Ash, near Liverpool. Highly Commended, J. Ashcroft, Waterloo, near Ashton-under-Lyne; J. Conyers, jun., 42, Boar Lane, Leeds; T. Wareing, Preston. Commended, E. Turner, Stoneclough, Kersley, near Manchester; the Right Hon. Lord Berwick, Cronkhill, near Shrewsbury; J. Robinson, Vale House, near Garstang. (A superior class.) *Chickens of 1856.*—**SILVER CUP**, W. C. Worrall, Rice House, Knotty Ash, near Liverpool. Second, J. Robinson, Vale House, Garstang. Highly Commended, J. Conyers, jun., 42, Boar Lane, Leeds; J. Robinson, Vale House, near Garstang. Commended, G. C. Adkins, West House, Edgbaston, Birmingham; W. Chorley, Warrington; T. Wareing, Preston; Edmund Turner, Stoneclough, Kersley, near Manchester; C. E. Coleridge, Eton, Windsor; T. W. Hill, Holly Bank, Hopwood, Heywood, Manchester; J. Starkie, Grove, Padiham; G. Haigh, Liphill Bank, near Holmfirth. (This class excellent.)

PHEASANT OR HAMBURGH (Silver-spangled).—**SILVER CUP**, J. B. Chune, Coalbrook Dale, Shropshire. Second, J. Dixon, Bradford. Highly Commended, D. Wilson, Sutton Fields, near Crosshills, Yorkshire. Commended, J. Postlethwaite, Beckside, Kirkby, near Ulverston. *Chickens of 1856.*—**SILVER CUP**, Mrs. H. Sharp, Mill Lane, Bradford, Yorkshire. Second, T. Burnett, Hutton. Highly Commended, Messrs. Bird and Beldon, Eccles Hill Moor, near Bradford; R. Teebay, Fulwood, near Preston; J. Dixon, Bradford. Commended, J. Robinson, Vale House, near Garstang. (A first-rate class.)

POLAND (Golden).—**SILVER CUP**, R. H. Bush, Litfield House, Clifton, Bristol. Second, J. Dixon, Bradford. Highly Commended, J. Conyers, 42, Boar Lane, Leeds; C. E. Coleridge, Eton, Windsor; J. Brundrit, Southbank, Runcorn, Cheshire. Commended, Master G. J. Horner, Sherlock Street, Hull. (A very good class.) *Chickens of 1856.*—**SILVER CUP**, J. Dixon, Bradford. Second, R. H. Bush, Litfield House, Clifton, Bristol. Commended, J. Brundrit, Southbank, Runcorn, Cheshire.

POLAND (Silver).—**SILVER CUP**, C. E. Coleridge, Eton, Windsor. Second, J. F. Greenall, Grappenhall, Warrington. Highly Commended, G. Fell, Warrington. Commended, G. C. Adkins, West House, Edgbaston, Birmingham. (This class far beyond mediocrity.) *Chickens of 1856.*—**SILVER CUP** and Second Prize, J. Brundrit, Southbank, Runcorn, Cheshire. Highly Commended, C. E. Coleridge, Eton, Windsor.

POLAND (any other variety).—**SILVER CUP**, G. H. Perkins, Gothic Villa, Moseley, Birmingham. Second, C. E. Coleridge, Eton, Windsor. Highly Commended, J. F. Greenall, Grappenhall Hall, Warrington; T. M. Hutton, Summers Hill, Dublin; G. H. Perkins, Gothic Villa, Moseley, Birmingham. Commended, T. Batty, Brown Hill, Uppermill, Holmebridge, near Huddersfield. *Chickens of 1856.*—**SILVER CUP** and Second Prize, G. Ray, Ivy Cottage, Minestead, Lyndhurst, Hampshire. (This class not a good one.)

GAME (Black-breasted and other Reds).—**SILVER CUP**, T. Robinson, Ulverston. Second, H. Shield, Preston, Rutland. Highly Commended, T. Burnett, Hutton. Commended, T. E. Atkinson, Bradley Field, Kendal, Westmoreland. *Chickens of 1856.*—**SILVER CUP**, Mrs. H. Sharpe, Mill Lane, Bradford, Yorkshire. Second, R. Barrow, Bradley Field, near Kendal, Westmoreland. Highly Commended, Henry Worrall, Spring Grove, West Derby, near Liverpool. Commended, J. Deakin, jun., Ulmes Walton, near Preston.

GAME (White and Piles).—**SILVER CUP**, Thomas Wilkinson, Colne, Lancashire. Second, Capt. W. Hornby, Knowsley Cottage, Prescott. Commended, J. M. Baker, Dordon Hall, Atherstone. *Chickens of 1856.*—**SILVER CUP**, G. Haigh, Lipp Hill Bank, near Holmfirth. Second, F. Sabin, 25, Bull Street, Birmingham. Highly Commended, T. W. Jones, Portland Cottage, Wellington, Salop.

GAME (Duckwing and other Greys and Blues).—**SILVER CUP**, J. Dixon, Bradford. Second, H. Worrall, Spring Grove, West Derby, Liverpool. Highly Commended, J. Monsey, Thorn Lane, Norwich. Commended, F. Atkinson, Lord's Plain, Levens, Westmoreland. *Chickens of 1856.*—**SILVER CUP**, Mrs. H. Sharp, 47, Mill Lane, Bradford. Second, T. Grove, Leamington. Highly Commended, F. Atkinson, Lord's Plain, Levens, Westmoreland. Commended, J. G. Sugden, Eastwood House, Keighley.

GAME (any other variety).—**SILVER CUP**, W. Dawson, Selly Oak, near Birmingham. Second, J. Tate, Preston. *Chickens of 1856*.—**SILVER CUP**, Messrs. Bird and Beldon, Eccles Hill Moor, near Bradford. Second, W. Hayhurst, 125, Church Street, Preston. Commended, J. Craven, Jumble Bridge, Wakefield.

ANY OTHER VARIETY NOT COMPRISED IN THE FOREMENTIONED CLASSES.—**SILVER CUP**, W. Rogers, Woodbridge, Suffolk. Second, T. L. Fellowes, Beighton Rectory, Acle, Norfolk. Commended, R. R. W. Westbrook, Old Pottery, Braidland by Paisley, Scotland; J. Smith, Henley in Arden.

BANTAM (Gold-laced).—**SILVER CUP**, M. Leno, Harpenden, Herts. Second, G. C. Adkins, West House, Edgbaston, Birmingham. Highly Commended, G. McMullen, 6, South Meadow Lane, Preston. Commended, G. Potter, Fallowfield, near Manchester; R. Blackburn, Edward Street, Preston; T. Hincks, Penkridge. (A good class.)

BANTAM (Silver-laced).—**SILVER CUP**, W. Wright, West Bank, Widnes, Warrington. Second, M. Leno, Harpenden, Herts. Commended, W. Newsome, Heckmondwike, Yorkshire.

BANTAM (any other variety).—**SILVER CUP**, M. Ridgway, Dewsbury. Second, J. Conyers, jun., Boar Lane, Leeds. Commended, M. Turner, Preston; W. Wanklyn, jun., Green Bank, Bury, Lancashire.

DUCKS (Aylesbury).—**SILVER CUP** and Second Prize, J. Weston, Aylesbury, Bucks. Highly Commended, J. Robinson, Vale House, Garstang; Miss J. Grimshaw, Swinshaw, near Rawtenstall; W. W. Rutledge, Storthend, Kendal; J. Conyers, 42, Boar Lane, Leeds; T. W. Home, Kendal; J. Dixon, Bradford. Commended, J. C. Forrest, Lower Darwen.

DUCKS (Rouen).—**SILVER CUP**, T. W. Pearse, Bromham Road, Bedford. Second, T. Banks, Weston House, Runcorn. Highly Commended, W. Wanklyn, jun., Green Bank, Bury, Lancashire. Commended, the Right Hon. Lord Berwick, Cronkhill, near Shrewsbury; H. Worrall, Spring Grove, West Derby, Liverpool.

DUCKS (any other variety).—**SILVER CUP**, F. W. Earle, Edenhurst, Prescott. Second, H. Worrall, Spring Grove, West Derby, Liverpool. Highly Commended, G. C. Peters, Moseley, near Birmingham; G. Botham, Wexham Court, Slough, Bucks; D. Parsons, Cuerden; T. Robinson, Ulverston; T. Ullock, Quarry House, Windermere; G. Daft, Halloughton, Southwell, Notts. Commended, the Right Hon. Lord Berwick, Cronkhill, Shrewsbury; T. Burnett, Hutton; Sarah Rigby, Eccleston, Prescott; J. Townsend, jun., Laneslaw Bridge, Colne. (A very good class.)

EXTRA PRIZES.

THREE PENS OF THREE DISTINCT VARIETIES.—*Mr. Edward Pedder's Silver Cup, value £10 10s.*, W. Wright, West Bank, Widnes, near Warrington. Commended, J. Tate, Syke Hill, Preston; Captain W. W. Hornby, Knowsley Cottage, Prescott.

SPANISH.—*Mr. Thomas Burnett's Silver Cup, value £5 5s.*, J. Howard, Tarleton. (To this pen the Silver Cup was awarded, the Judge at the same time expressing his positive conviction of trimming being resorted to, although not proveable by the naked eye; after-applications proved this supposition correct, and the Cup accordingly is withheld.) Highly Commended, M. Potter, Prestwich, near Manchester; J. R. Rodbard, Aldwick Court, Langford, near Bristol; J. Tate, Preston; Captain W. W. Hornby, Knowsley Cottage, Prescott; G. Fell, Springfield, Warrington. Commended, W. W. Brundrit, Runcorn; Miss M. L. Rake, Brandon Hall, Bristol. (A truly excellent class.)

GAME.—*Preston Licensed Victuallers' Silver Cup, value £5 5s.*, C. Edwards, Brockley Court, Bristol. Highly Commended, Captain W. W. Hornby, Knowsley Cottage, Prescott; C. R. Titterton, Snow Hill, Birmingham; H. Worrall, Spring Grove, West Derby, Liverpool. Commended, G. Love, Rufford Hall, Rufford.

COCHIN-CHINA CHICKENS (Buff).—*Mr. Joseph Tate's Silver Cup, value £5 5s.*, T. Stretch, Marsh Lane, Bootle, Liverpool.

GAME COCK.—*Mr. Billington's Silver Cup, value £5 5s.*, R. Swift, Southwell, Notts. Highly Commended, C. A. Titterton, Snow Hill, Birmingham. Commended, H. Worrall, Spring Grove, near Liverpool; G. Smith, Gosta Green, Birmingham; F. Atkinson, Lord's Plain, near Milnthorpe, Westmoreland; E. W. Hazlewood, Bridgnorth, Shropshire; W. Salthouse, 43, Great Avenham Street, Preston; H. Shield, Preston, Rutland; G. C. Adkins, West House, Edgbaston, near Birmingham; J. Dodgson, Thwaites Mill, Millam, Cumberland; J. M. Baker, Dordon Hall, Atherstone; R. Barrow, Bradley Field, near Kendal; J. Fletcher, Stoneclough, near Manchester.

DORKING CHICKENS.—*The Ladies' Silver Cup, value £5 5s.*, Captain W. W. Hornby, Knowsley Cottage, near Prescott. Highly Commended, G. A. Geldard, Aikrigg End, Kendal; J. Robinson, Vale House, near Garstang; W. Evans, Hurst House, Prescott. Commended, J. L. Wright, Highfield House, Runcorn, Cheshire; Sir T. Hesketh, Bart., Rufford Hall; J. M. Hutton, Summershill, Dublin. (The competition excellent in this class.)

SPANISH COCK.—*Mr. Robert Blackburn's Silver Cup, value £5 5s.*, Master McGregor Rake, Brandon Hill, Bristol. Highly Commended, Mary Marriott, Floore, near Weedon; J. Howard, Tarleton; Richard Teebay, Fulwood, near Preston.

BRAHMA POOTRA COCK.—*Mr. Paul Catterall's, jun., Silver Cup, value £5 5s.*, C. Dain, High Street, Southampton. Highly Commended, P. Catterall, jun., Whittingham House, near Preston. Commended, R. Teebay, Fulwood, near Preston; T. Burnett, Hutton.

PIGEONS.

CARRIERS.—First and Second, A. H. Emery, Bath Street, Birmingham. Commended, H. N. Pedder, Preston; R. Brade, 18, Gordon Street, Preston.

TUMBLERS.—First, H. N. Pedder, Preston. Second, G. C. Adkins, West House, Edgbaston, Birmingham. Commended, E. Fielding, No. 2, Shotland Road, Rochdale; Mrs. E. W. Lingard, Snow Hill, Birmingham.

POWTERS.—First, G. C. Adkins, West House, Edgbaston, Birmingham. Second, H. N. Pedder, Preston.

RUNTS.—First, Mrs. E. W. Lingard, Snow Hill, Birmingham. Second, G. C. Adkins, West House, Edgbaston, Birmingham. Commended, R. Moss, Old Swan, near Liverpool.

JACOBS.—First, I. Monkhouse, Kendal, Westmoreland. Second, G. C. Adkins, West House, Edgbaston, Birmingham. Commended, C. R. Titterton, Snow Hill, Birmingham.

FANTAILS.—First, G. C. Adkins, West House, Edgbaston, Birmingham. Second, Master J. E. Mapplebeck, Highfield House, Moseley Road, Birmingham. Commended, Mrs. E. W. Lingard, Snow Hill, Birmingham; W. Salthouse, 43, Great Avenham Street, Preston.

OWLS.—First, C. R. Titterton, Snow Hill, Birmingham. Second, G. C. Adkins, West House, Edgbaston, Birmingham. Commended, D. Parsons, Cuerden; R. Moss, Old Swan, near Liverpool.

TRUMPETERS.—First, H. N. Pedder, Preston. Second, Master J. E. Mapplebeck, Highfield House, Moseley Road, Birmingham.

BARBES.—First, G. C. Adkins, West House, Edgbaston, Birmingham. Second, I. Monkhouse, Kendal, Westmoreland. Commended, H. N. Pedder, Preston.

TURBITS.—First, G. C. Adkins, West House, Edgbaston, Birmingham. Second, H. N. Pedder, Preston.

DRAGOONS.—First, C. R. Titterton, Snow Hill, Birmingham. Second, Master J. E. Mapplebeck, Highfield House, Moseley Road, Birmingham. Commended, J. Wilding, Cop Lane, Penwortham.

ANY OTHER NEW AND DISTINCT VARIETY.—First, R. Moss, Old Swan, near Liverpool. Second, H. N. Pedder, Preston. Commended, J. Gill, 34, Knowsley Street, Preston.

SOUTH EAST HANTS POULTRY SHOW.

THIS was held at Fareham yesterday and to-day. Mr. Rodbard, Mr. R. James, and Mr. Coleridge, gained the pieces of Plate. Messrs. Cother, Rodbard, Locke, Popham, Allen, Pettat, Antill, Beardmore, Vaux, A. Peters, Serle, Fox, Case, Edwards, Down, Newick, Mew, Frederick, Lewis, St. John, West, Leggatt, and Howard, took prizes. Full particulars next week.

OUR LETTER BOX.

RABBIT BREEDING (*W. Wooler*).—Whatever tends to cultivate habits of attention, and the exercise of judgment and perseverance during a boy's youth, is a desirable occupation. The rearing for exhibition rabbits, poultry, flowers, or even canaries, is therefore worthy of being encouraged. We shall be glad to have from you any practical observations on rabbit rearing.

RABBITS AT CRYSTAL PALACE (*J. Mackworth*).—Write to Mr. Percy Boulton, Beverley, Yorkshire. We do not know a Mr. Forrest, from whom you wish to get eggs of Duckwing Game fowls. If he sees this, perhaps he will write to us, and give his address. We are always ready to answer one or two questions; but many questions, and on widely different subjects, occupy more time than we can afford to one correspondent.

BOOK ON BIRDS' EGGS.—*T. A. S.* wishes for a work, at a moderate price, with coloured illustrations. Will some of our readers favour us with information on the subject?

SHREWSBURY AND ANERLEY PRIZES.—"I have not yet received my prize money from the late Shrewsbury and Anerley Shows. Will any of your readers inform me if they have succeeded in getting theirs, and in what way? I should imagine it could be treated as a case of swindle. I not only paid entrance fees at Anerley, but a two-guinea subscription."—*C. R. TITTERTON*.

[It is useless to occupy our columns further upon this subject. Prosecute some member of each Committee. No appeal but that of force will influence such men.]

BREAST OF GOLDEN-SPANGLED HAMBURGH COCK.—"Ought the breast of a Golden-spangled Hamburg cock to be a black or spangled? I have heard of both. I now appeal to any person who may think it worth while to answer the question."—*A CORRESPONDENT*.

PHILOPERISTERON SHOW.—We are requested to correct the following misprints in our account of this Show:—The name of Mr. Bult was printed Butt in one place, and the name of Mr. Parkinson was omitted as an exhibitor of Carriers.

LONDON MARKETS.—JANUARY 26TH.

COVENT GARDEN.

We have little to add to last week's report, owing to the usual slackness which occurs at this time of year. We have a fair supply of all outdoor produce, both home-grown and foreign. Good *Pines* are in rather better request among country customers, and we have still some excellent retarded *Grapes*, comprising *Black Hamburg*, *West's St. Peter's*, and *Muscats*; indeed, much more than usual at this period, and we are glad to find growers pay attention to this desideratum.

POULTRY.

The market is still but scantily supplied, and prices are well maintained.

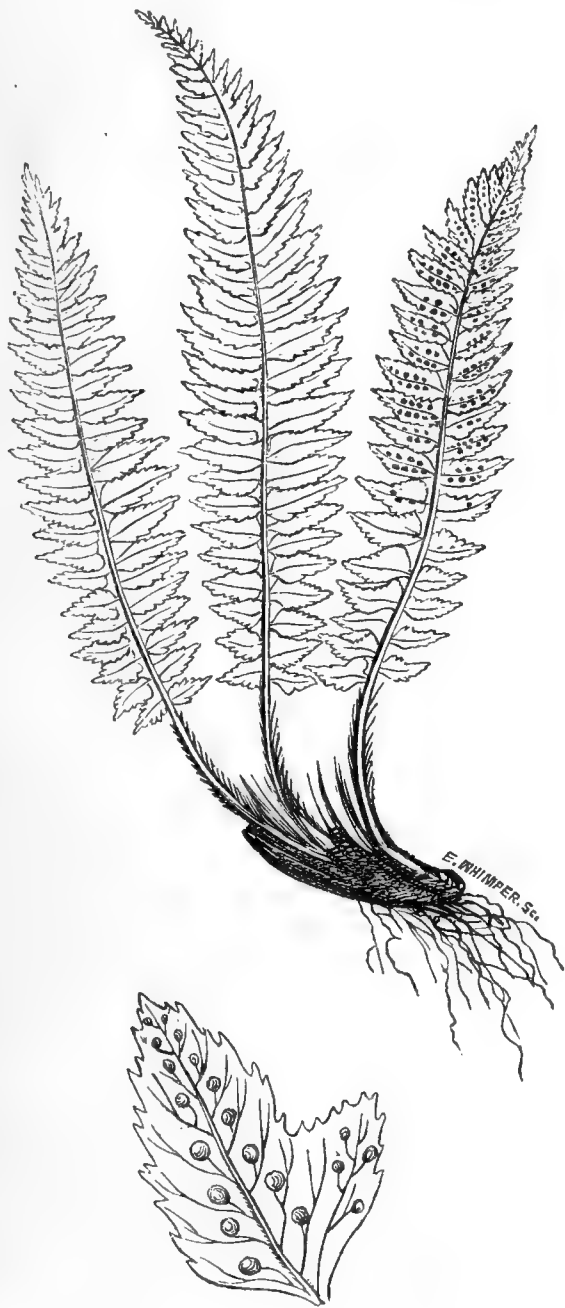
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WEEKLY CALENDAR

D M	D W	FEBRUARY 3—9, 1857.	WEATHER NEAR LONDON IN 1856.				Sun Rises.	Sun Sets.	Moon R. & S.	Moons Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
3	TU	Butcher's Broom (<i>Ruscus</i>).	30.025—30.011	44—25	S.E.	—	38 a. 7	51 a. 4	3 14	9	14 9	34
4	W	Alder (<i>Betula alnus</i>).	29.995—29.952	42—32	S.W.	01	36	53	4 37	10	14 15	35
5	TH	Violet (<i>Viola odorata</i>).	30.137—30.093	52—41	S.W.	02	34	54	5 48	11	14 20	36
6	F	Daffodil (<i>Narcissus</i>).	29.927—29.612	50—47	S.W.	02	33	56	6 41	12	14 23	37
7	S	Mouse-Ear (<i>Cerastium</i>).	29.912—29.662	56—47	S.W.	06	31	58	7 17	13	14 27	38
8	SUN	SEPTUAGESIMA SUNDAY.	30.038—29.986	50—45	S.W.	—	29	V	rises.	☺	14 29	39
9	M	Barren Strawberry.	29.972—29.909	60—45	S.W.	—	27	2	5 a 39	15	14 30	40

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 45.1°, and 32.4°, respectively. The greatest heat, 62°, occurred on the 9th, in 1851; and the lowest cold, 4°, on the 9th, in 1847. During the period 97 days were fine, and on 99 rain fell.

POLYSTICHUM LONCHITIS.



THIS Fern has been included by some modern botanists in the genus *Aspidium*, and by others in *Polypodium*. By the older botanists it was called *Lonchitis*, which has always since been retained as the specific name, and is appropriate, *logchitis*, in Greek, signifying “resembling a spear,” which is applicable to its leaves. In English it is known as the *Holly Fern*, being evergreen, dark-coloured, leathery, and prickly, *Rough Alpine Shield Fern*, *Royal Polypody*, *Great Spleenwort*, and *Spleenwort Polypody*.

Its root is tufted, large, coarse, scaly, black, and having numerous fibrous rootlets. *Fronds* in a circle round the crown of the root, and leaning outwards in a cup-like arrangement, varying from six inches to fifteen or more inches in height, narrow spear-head shaped in their general outline, stiff and harsh, colour very deep glossy green. *Stem* furrowed in front, clothed for three-quarters of its length with leaflets, and the unleafleted part covered with broad, large, tapering, dark brown scales. *Leaflets* crowded, so as to overlap the one next below, short-stalked, about three-quarters of an inch long, alternate, smooth on the upper surface, rather scaly on the under surface, pointed egg-shaped, but rendered irregular by a lobe near the base on the upper side, saw-edged, the teeth being irregular and fringed with sharp bristles. The mid-vein of each leaflet straight, with alternate side-veins, these being also branched. The *fructification* is borne by the lowest upper branch of each side-vein, forming a row of masses pretty close to, and on each side of, the mid-vein. The lobe of the leaflet has a small mid-vein of its own, and masses of fructification are on each side of it. The fructification rarely occurs except upon the upper leaflets of the fronds. The cover (*indusium*) of each mass is circular, fixed by the centre, notched on one side, and separating all round as the sori, which are light brown, increase in size.

This species is rare, and found only in mountainous districts in the north of the British Islands. Its favourite haunts are the clefts of rocks near the mountain tops.

In *England* it has been found about the upper part of the Tees; near Settle, in Yorkshire; on Swarth Fell, near Ulleswater, and other parts of Cumberland.

In *Wales*, at Clogwyn-y-Garnedh, Snowdon; and on Glyder, near Llanberris.

In *Scotland*, very common in the Highland valleys and exposed mountain sides. On the Bredalbane Mountains, Perthshire, at an elevation of about 3,000 feet; Craig Chailleach, Perthshire; Clova Mountains, and Glen Isla, Forfarshire; on Ben Lawers, and Falcon Clints, near Chaldron Spout, Teesdale; Aberdeenshire, Moray, and Ross-shire; base of Benmore, Sutherland; on Ben Lomond; and in Glen Phee.

In *Ireland*, on Bandon Mountains; in a glen east of Lough Eske, Donegal; and on Glenade Mountain Leitrim.

Polystichum lonchitis was not known as a British Fern when Ray published, in 1670, his *Catalogus Plan-*

tarum Angliæ, nor when his *Historia Plantarum* issued from the press, in 1686, but it had been discovered by Mr. Lloyd between that year and 1696, when Ray mentions it in the second edition of his *Synopsis Stirpium Britannicarum*. He adopted the name of *Lonchitis aspera major*, or "larger rough Spleenwort with indented leaves." He says, "It issues from clefts in the rocks on the tops of the mountains of Wales, as at Clogwyn-y-Garnedh-y-Grib-Goch-Trygvylchan (*D. Lhwyl*)."

Mr. W. Reeve observes that it is a very ornamental little plant when it can be cultivated successfully. He grew it in a cool house, where it was constantly shaded, and upon a damp bottom, with great success. He employed a compost of sandy loam and peat in equal parts, with a liberal admixture of sharp sand. It may be cultivated upon the rockery, but great care is necessary, it being a very shy plant to establish itself in dry, exposed situations. A shady part of the rockery must be selected, where it can be kept damp; but it will not bear stagnant moisture. It must be planted firmly in the compost above-mentioned as early in the spring as possible; and if a hand or bell-glass can be kept over it for a short time all the better, as this will keep the soil moist about it for some time without the application of much water. Give a little air occasionally.

It will thrive remarkably well in a greenhouse, and Mr. Reeve had it produce fertile fronds abundantly in a stove temperature. It is difficult to increase except by the seed, which should be sown as soon as ripe, and treated in the same manner as directed for other Ferns. A cold pit will meet its requirements during the winter months, and in the summer also if kept shaded and damp.

MEMORIAL OF AN UNFORTUNATE CAMELLIA.

If there be "sermons in stones, and books in the running brooks," why not a kind of language in plants? Indeed, the cruel usage about to be detailed, to which our much-esteemed friend Camellia has been subjected, would almost make a stone speak; and surely a living plant has a higher claim to be heard than a stone. Let us, then, for a few minutes, hear what poor Camellia has to say for herself.

"I can boast of excellent parentage. My mother, from whom I was torn somewhat abruptly, and without warning, always enjoyed the most robust health; but her lot had fallen into excellent hands, so that she never knew what a sorry affair a poor shattered constitution is. When first I left her, however, I fell into merciful hands, and my master, knowing that I required a little of the weaning process, placed me in what he called a propagating house; and in order to prevent me from too much perspiration, which my system could not afford, placed a beautiful white glass over me, so that I suffered little for awhile from hunger and thirst, from heat or from cold; indeed, my needs at this time were very small. My master, too, very ingeniously placed me in beautiful white sand, which, although not of so stimulating a character as the food I had been accustomed to, soon caused me to root in the same way as my poor mother used to do, and with these nice roots soon came a sharp appetite, and I, of course, commenced a new being.

"I could now afford to perspire freely as my mother used to do, and my worthy master at once removed the pretty white glass from me, and I began to feel myself of some little consequence amongst the numerous relatives by which I was surrounded. However, I had another ordeal to undergo. I had to be taken from my homely fare, the white sand, and received a more stimulating diet, which they called 'potting me off.'

"I well remember that this process seemed very hard to me, for I was, indeed, pretty comfortable. However, I had fancied something would have to be provided for me, as my appetite kept increasing. This potting off made me feel sickly for a few weeks. I dropped my head, and my appetite fell off sadly; but my master took care that I did not lose much by perspiration, and kept me in a quiet part of the house until I took to my food again, when I at once discovered that he had cleverly anticipated my needs. I soon began to feel very robust; I had excellent food, and as good an appetite. It was really amusing to notice with what assiduity he prepared this new food. First, he so provided my new lodgings that the water I required to render my food nutritious and digestible might pass readily away when needed, for he knew that I was as partial to air as to water. My food, mostly turf, he chopped into small portions, in order to facilitate digestion, and fixing me firmly in my new house, he sprinkled some finer material amongst my tender fibres, so that no large cavities were left to suffer the water to escape before it had paid toll.

"In a short time I not only became reconciled to my lot, but felt very happy; and it being now the month of May, I had so thriven on my good diet, that I began to grow exceedingly, and in due time I found myself in a condition to produce blossoms; but this I grieve to say was the beginning of all my troubles. I had been hitherto in the hands of a respectable nurseryman, whose propagator (my master) seemed to have a most perfect knowledge of all my family for generations. They were originally from some part of China or Japan; but, taking a strong fancy to Britain, and, indeed, other parts of the civilised world, they indicated no desire to return; but, if they continue to quack me as they have done, I shall really be tempted to become outward-bound, rather than hide-bound, as I now am. I must now observe, that I was purchased by an amateur, as they call ladies and gentlemen who sometimes take to fiddling, and sometimes to plant growing, for amusement; and I am sorry to learn that some few of them are as bad fiddlers as florists, albeit many are prodigiously clever. My new master had but one idea about my family, viz., that we must be kept very warm; so I was placed at the hottest end of his new greenhouse, which appeared a very funny place to me, being only nine feet long. It was, however, crammed full of things, and I fell into an odd mixture of company; many I had never seen before. I understood, however, that some of them were from hot countries abroad, and several of them lived on sticks and broken pots, and would almost bear roasting.

"It was now about the end of November, and my blossom-buds were very plump, notwithstanding I had been so sweated as I had never been before; but the truth is, I was living on my capital, as men call it, and so I rubbed on awhile. But a very severe frost set in, and my new master, who, I believe, meant me well in his heart, seemed horribly alarmed for fear any of his pets should take cold; so he fired away with might and main, and, under pretence of having winter Camellia blooms, he consoled himself by thinking that he was merely keeping those salamander-like companions by the side of me comfortable, whilst he was really forcing me. And so he was; there was no mistake in the affair, for he forced my poor bloom-buds to fall off, and

this much disheartened me, for I had longed to look like other Camellias. But, poor silly man, he was what men call a kind of homœopathist; that is, if a Camellia can understand such hard words, one that administers very small quantities in very small doses. He used to give me a spoonful or two of water every morning from a neat little dandy waterpot; and how many times I have wished I could be allowed to stand out during a twenty-four hours' rain: I would have forgiven a degree or two of frost. However, I was obliged to submit, and my poor blossom-buds, short of supplies below, and hurried towards a premature development through heat before their parts were perfect, became doomed to destruction. My unfortunate employer was now in a pretty fix.—'Very odd, indeed,' he would say; 'I have watered it regularly, and kept it warm: what else could anybody do? Surely these nurserymen must have some secret that they will not tell folks.' He consulted two or three kind-hearted neighbours who knew a thing or two about plants; but their answers, it appears, were so contradictory, that he was more perplexed than ever. One said he had kept me too hot; another that he had watered me too much—had no right to water me every day; a third insisted that Jack Frost must have crept in some night whilst he was asleep, and that Kitty, the maid of all work, had been sweethearting, and had neglected the fire; another affirmed stoutly that it was some cold current had struck me; and not a few suspected something deleterious in the water. At last he determined on popping a query or two in the gardening periodicals; for, said he, these editors know a bit about everything. But he gained no ground; one suggested any one or all of the above causes combined; another that it was indispensably necessary to see the patient and to examine the roots. However, he thought he would just take his own inference in the matter, and believe a little of every one of the suggestions, not too much in any one; for he shook his head gravely, and said, 'Nothing like a medium; there is seldom any good in extreme opinions.'

"So now commenced a series of what I must call cruel persecution, which makes the sap stagnate in my poor shrunken vessels whilst I relate it; and the result was, that by the succeeding month of May I had lost most of that fine, deep green colour for which my poor mother was so famous, and which also distinguished me before I was so mauled and quacked. My unlucky master again sought advice, and went to an old gardener, a regular King of Spades, a man of 'levelling principles,' who was reckoned one of the first in the neighbourhood at dubbing a hedge, laying verges, pruning a Gooseberry bush, and such-like. He said I wanted fresh soil, it was become sour, and that the best thing would be to 'head me back,' by which proceeding I should, as he said, make fresh wood. Fresh wood indeed! I had nothing left to make it out of. However, off my head must come, and off it went, and a pretty skeleton I looked. My master, however, would not have me taken out of my pot; he said it was too much all at once, and the gardener said I must be put in a hot place, and forced into new wood; so my master, having a piping hot Cucumber frame at work, put me in that, and was ordered to plunge me in the warm manure. This done, and liberal waterings applied, my poor hardened stem certainly made some efforts at producing shoots, but they were poor yellow things; and my master was sadly annoyed, after being a few weeks in that situation, to find that on applying water to my soil it would not run through, but stood on the surface. At the same time my pot was always coated with a green scum. A 'cute neighbour was consulted, a lady by-the-by, and she advised my master to run a knitting needle through the soil in several places. This done, the water flowed again for awhile; but I had but few live fibres left, and of these about one-third perished by the intrusion of the

knitting needle. My employer was now getting quite disheartened, for, in truth, I was sinking in constitution continually.

"About this period, August I think, a clever nursery man, a great Camellia grower, called on my master, and was asked to look at poor Camellia. I could soon perceive that he quite understood my position, and how roughly I had been handled; and I shall not easily forget his mode of examining me. He first obtained permission to do as he pleased with me. This was readily granted. He instantly turned me out of my pot, and surveyed the ball with its drainage with a most critical eye. He then took off a few patches of the soil and squeezed it between his finger and thumb, afterwards tossing it on the ground most indignantly. It was full of rotten members, once live roots. He then searched the very interior, where he found a baked clot of dried-up roots, the lump quite impervious to any ordinary waterings. Methought that this proceeding would have been the death of me; and, indeed, so it would had I not felt persuaded that my new physician could understand very well how I had been tampered with, and would do all in his power to renovate my much-abused constitution.

"But to proceed. After taking all the soil he could from me, that which was once such nice chopped turf, but now become a mass like putty, he washed my roots in a bucket of water, thus removing every particle of the old soil as far as he possibly could; he then pruned away some of my decaying fibres, and again placed me in a nice clean pot, a size less than that from which I had been removed. I was now to be doubly potted, for he plunged my little pot inside one much larger, and, filling the cavity between with coarse new moss, he covered me with a glass again, like a cutting, the glass rim resting between the two pots. I was now placed, by his directions, in a mild corner of the greenhouse, in a place where sunshine could not reach me, and where little watering would be needed, with directions that a little water should be poured over the glass once or twice a week, in order to produce a slight amount of humidity in the air inside the glass. Thus I was to remain in quietude until the end of October, when the glass was to be removed, and I was to be kept in the coolest part of the greenhouse until spring. This was done, and the situation I occupied being far away from the flues, I enjoyed a cool, refreshing, and somewhat damp atmosphere. When spring arrived I found my strength increasing fast, for I had produced some nice new roots; and, as my good friend had advised that I should have one whole season's rest, that no attempt should be made to induce me to form flower-buds, that I should have my own way through the next summer—indeed, if I produced any blossom-buds they were to be stripped from me immediately—in the course of the next summer I had made nice shoots again, and began to feel as I used to do; and, as for blossom-buds, I thought it pretty well to produce the nice shoots, and to acquire through their instrumentality a nice lot of new fibres. This summer I was ordered to be put out of doors from July to October, and they set me on a bed of cinder ashes amongst some other hard-wooded plants; and very well we agreed together, for we all loved a partial shade, quiet, and a rather damp air; and when it rained much my master was advised to lay me on my side until the heavy rains were past.

"I had now for awhile got over my sorrows, and the next spring I cut a respectable figure, having four very fine blossoms, so my master thought he at last understood the character of my family; but I had yet farther trials to undergo, which I suppose he dreamt not of; but I am exhausted with my own tale for the present. I, however, am determined some day to tell the rest of my disasters for the benefit of my relations in general, and as a warning to cultivators. I am persuaded that

there is not a family of plants in this country that are more ill used than we have been. Now, I do wish that those who admire our blossoms knew how much we love a simple course of treatment. They would save themselves a deal of trouble and expense, and ourselves a deal of misery and degradation."

Thus for the present ends poor Camellia's catalogue of woes. I live in hopes of some day obtaining the rest of her history, which, according to her statement, threatens some important disclosures. In that event I shall with pleasure give it to the public. Perhaps some useful lesson may be derived from it. R. ERRINGTON.

NORWOOD HALL.

(The seat of J. Wheal, Esq.)

I VISITED lately this place, two miles north of Sheffield, and found a good collection of *Orchids* very well grown, and many in bloom. As it may be desirable for new beginners to know what species flower in winter, I took their names down, and shall send them to be inserted in our COTTAGE GARDENER for their information. The principal Orchid house here is a lean-to, with a rather flat roof, from which in winter drops of condensed water were continually falling upon the plants. To remedy, or rather, prevent this Mr. Ellis, the gardener, procured some large sheet glass wide enough to reach from rafter to rafter. This is fixed inside, and it not only prevents the dripping of the water; but also prevents the escape of heat in winter, and shades the plants from the burning foci of sun heat on the outer glass. The Orchids are, as is usual, some grown in pots, others in baskets, and the rest on blocks of wood. I did not see a single plant that was sickly. All appeared to be in robust health. Behind the Orchid house is a raised border. In it are planted various Creepers, and the surface is covered with Ferns, Lycopodiums, &c. A comparatively new plant, the *Eranthemum leuconervum*, seemed to be quite at home on this border. Its beauty, green leaves variegated with silver, rendered it exceedingly interesting. This large house contained the plants at rest. In another part of the garden there is a half span-roofed low house. In it the East Indian Orchids in growth are kept.

At this place I saw the large *Vanda Batemanniana*, which flowers every year. It was purchased at a sale in Stevens's Rooms for sixty guineas, and is, I believe, the finest plant of the kind in this country.

The following Orchids were in flower:—

Ansellia Africana.—A large plant, with three large, many-branched flower-stems.

Calanthe vestita.—Both varieties with many stems. This is an exceedingly fine winter-flowering Orchid.

Limatodes rosea with three stems. This plant is nearly allied to *Calanthe*, and is very beautiful.

Marmodes speciosa.—One of the best of this curious genus.

Epidendrum ciliare.—A good species for winter blooming.

Lælia acuminata, *L. anceps*, *L. anceps Barkeriana*.—All these are good species for winter flowering.

Lycaste macrophylla.—Though not so showy as many species, this is worth growing to flower at this season of the year.

Brassia Martiana.—A curious, pretty, scarce species.

Oncidium papilio.—The rich-coloured, large-flowered variety; exceedingly beautiful.

Sophronitis cernua.—A fine plant on a block with numerous flowers.

Sophronitis cernua coccinea.—Decidedly more scarlet than the species. A distinct variety.

Phalenopsis grandiflora with several blooms.

STOVE PLANTS IN BLOOM.

Poinsettia pulcherrima.—Both the scarlet and white varieties. The latter shows best by candle-light.

Rondeletia speciosa major.—This is planted out in the border above-mentioned, and I was assured is constantly in bloom.

Geissomeria longiflora.—This plant is somewhat difficult to grow so as to form a fine, handsome plant. Mr. Ellis manages it well by putting four or five plants in a pot. By this method he obtains as many heads of its beautiful, tube-shaped, scarlet flowers.

Begonias.—Many species. *B. insignis* is the best for winter blooming. There are here some good specimens of the curious Pitcher plants. The rare *Nepenthes sanguinea* had five perfect pitchers on it, though not above a foot high.

There is also a good greenhouse here, and in order to make the most of it Vines are very successfully grown on the rafters. The back wall is covered with Camellias planted out on a similarly raised border to that in the Orchid houses. I was glad to see them in perfect health, and covered with blossom-buds. Many a naked back wall in various greenhouses throughout the land might be covered with this fine-flowering, evergreen shrub. On the stages I noticed some well-grown, bushy Heaths of the better kinds.

On the whole I was much gratified by what I saw at Norwood Hall. T. APPLEBY.

THE FIRS.

(The seat of Edward Smith, Esq.)

THIS place is in the valley, about half a mile from Norwood Hall. It has been built and the gardens formed about ten years. There is a neat range of span-roofed ridge-and-furrow houses. One is a greenhouse, and there are three houses filled with Orchids. Though the collection has been so lately formed there are many good plants of the best varieties there, especially a *Dendrobium Dalhousianum*, which is five feet high, and as many through, with the stoutest and strongest pseudobulbs I have ever seen.

The plants I noticed here in flower (I visited it the same day I called at Norwood Hall) were as follows:—

Lælia autumnalis.—Very neat and beautiful.

L. anceps.—Very strong. *L. Barkeriana*, also, finely bloomed.

Dendrobium moniliforme (the bracelet Dendrobe).—On this plant were scores of its beautiful rosy blossoms, which at this inclement season were the more remarkably lovely. Few Orchids surpass this gem in beauty.

Ansellia Africana.—Well bloomed.

Oncidium leucocheilum.—A very neat and free-flowering Orchid; also a variety of the same with darker spots. Both had many long spikes.

STOVE PLANTS IN FLOWER.

Poinsettia pulcherrima.—Many plants. I measured one flower; it was seventeen inches diameter—a brilliant scarlet star. The plants were generally more dwarf than usually seen.

Henfeya scandens.—I never thought much of this plant till I saw it here. As its name imports, it is a scandent or half-climbing plant, with large leaves and corymbs of white, heavy-swelling flowers. The plant here was planted out, and covered a side pillar completely. I am sure I am within compass when I say it had upwards of a hundred bunches of flowers on it. It was really a fine object at this season of the year.

Thyrsacanthus rutilans.—Another fine winter-flowering stove shrub. The flower-stem droops straight downward, and, though the flowers individually are but small

(they are tubular, and about an inch long), yet they are so numerous, and of such a bright scarlet colour, that the plant is very attractive.

In a corner of the stove I noticed a strong plant of the *Abutilon insigne*. It had reached the roof, and spread out its branches considerably. Every branch had numerous cup-shaped, dark-coloured blossoms, which are showy and beautiful. In a pot this plant is but a poor object; but when planted out, and allowed to grow naturally, it is a desirable object. It flowers equally well in a good greenhouse. This place is under the management of Mr. Payne, and does him great credit. The owner is a lover of plants, and takes great delight in his garden.

T. APPLEBY.

PREPARATION OF THE SOIL FOR SEEDS.

THE approaching season renders it necessary that preparation be made for sowing the seeds from which the various crops of vegetables spring to supply our wants in the ensuing summer and autumn, and some of them even later than that. The well-being of all crops depends more or less on the state of the ground at the time the seed is committed to it; therefore a few words to the inexperienced may be acceptable, the more especially as some of the work on which the welfare of the crop depends ought to be done some weeks before the seeds are committed to the earth.

Some of the crops are benefited, and others are injured, by the application of dung or other enriching matter at this season. *Carrots*, *Parsnips*, and *Beet* are certainly better without that stimulant unless the ground be poor, or the dung be buried some depth; but *Onions*, *Turnips*, all the *Cabbage* tribe, and, in fact, almost all other crops, are better by the ground being made tolerably rich at the time of sowing or shortly before that time. The reason is obvious in all these cases. *Beet* is seldom wanted a large size, as it then becomes coarse and bad coloured. *Carrots* and *Parsnips*, though they seldom get too large, are liable to become forked or double rooted where enriching matter is near the surface to entice the roots to remain there. Some small crops ought of necessity to be denied a rich soil, otherwise the purpose they are intended for is defeated; such, for instance, are *Onions for pickling*, which are grown to greatest perfection on ground that is dry and poor; or, where that cannot be, the crop is left very thick on the ground. A few notes on each crop will be most useful.

ONIONS.—It is not unusual to sow this crop on ground which has recently borne Celery. On that account it is advisable to level and dig the ground as it becomes vacant. The last crop of Celery, being supposed to remain on the ground after the main Onion crop is sown, must therefore be appropriated to something else. In fact, if the ground is at all inclined to be stiff, the portion intended for Onions ought to be dug at least a month before sowing time, that frost and the other variations of weather may have had time to pulverise the surface so as to make it an acceptable bed for the seed. In cases where the soil is of that free and open kind which allows of being operated upon at all times, a shorter period will suffice if its previous cropping or other circumstances prevent its being got ready beforehand. At the same time let it be fully understood that when the proper season arrives for sowing, which, in the south of England, may vary from the middle of February to the middle or latter end of March, accordingly as the weather may be, it is not prudent on any occasion to delay that operation long; for, though the ground may be in a rough, unkind state to receive the seed, yet, as the period has arrived for sowing it, if the weather at the moment is favourable for doing so, it is better at once to sow. The young plants will not

prosper so well as when more care has been taken in preparing the seed bed; still Nature is so accommodating as in some degree to pulverise and prepare the ground for their use after they have begun to occupy it. Observe that in sowing an extra amount of labour ought to be bestowed in breaking up rough, unwieldy clods that are at the top, and the ground ought to be stirred and broken at least eighteen inches deep; but be sure always to retain a few inches of fine, mellow earth at the top; and at sowing time trample as little on it as can be, especially if it be wet or heavy. If very light, open, and dry, a certain amount of consolidation will be necessary.

CARROTS.—The ground for this crop, even more especially than for Onions, ought to be got ready beforehand; and, as has been stated before in these pages, a plot where Peas, Scarlet Runner Beans, or Potatoes were last grown is preferable to where Broccoli or any other of the Cabbage tribe has been just before. Deep trenching in frosty weather and the best soil retained at the top are preferable to a quantity of dung being merely dug in at the surface. An open situation is also requisite, for underneath trees or other shade Carrots produce little but top, while in poor, shallow soil the roots in vain search for that food which they look for from below, and are consequently small, poor, and starved. Should the soil be one of that description it would be advisable to manure the bottom of the trench in trenching, in order to entice the roots downwards. The time for sowing Carrots is seldom before the 1st of April, except in certain cases where early ones are wanted, or where there is the prospect of a long, dry spring. In the latter case it is advisable to sow while the ground contains sufficient moisture for the seeds to germinate in.

PARSNIPS.—The seed of these is much hardier than that of Carrots, and cannot well be sown too early; but the ground ought to be well done by. A rather moist situation often produces good Parsnips; but they seem to adapt themselves to circumstances better than Carrots, for I have seen tolerably good crops under trees or on dry ground; but on both these occasions other circumstances tended to compensate for the defects of situation.

BEE.—The best Red Beet need not be sown before the 1st of May, as size is not so important as good colour and other qualifications. A dry, open soil, not too rich in manure, is the best for this crop; but, like Carrots, it requires an open situation, and produces little but top or small, deformed, or forked roots when grown under the shade of trees or other improper situations.

J. ROBSON.

POTATO CULTURE.

It is of great importance to many, indeed, I may say everybody, to know the varieties which are the best and most productive in different counties, localities, and soils. Every one knows that good light soils produce the best quality, and one great point of success is to change the seed every year, if you have a friend that would honestly exchange with you. Many condemn a good Potato because their soil or situation does not suit it, and, perhaps, their next-door neighbour will hold it in the highest esteem. Last season my employer had some of the *York Regents* planted in the field, and some of the *Farmer's Profit*. Some people call this variety the *Forty-fold*, and others call it the *French Spreader*. The *Forty-folds*, as I name them, were a good crop, and the *Regents* scarcely good for anything. This season the *Regents* were brought into the garden, a good, light, rich soil, and a finer crop I never saw, both for size and quality.

The three leading sorts in this part are the *Ash-leaved* for earliest production, *Regents* for second, and for a general Potato the *Forty-fold*, which retains its good qualities until we get new Potatoes.

The *Lapstone Kidney* I have never seen since I have been

in Norfolk, nor can I get it true. I obtained, as I thought, a peck of them, but when they came up I soon found out they were only the *Fluke*. I saw a small piece of ground planted with the *Lapstone*, in Worcestershire, in 1853. A few very small ones were given to us, and without expecting more than a crop for seed. They were planted three feet apart from row to row, and one foot between each two sets, and then a row of Cauliflower plants between them; but the Potatoes sprang up like giants, and smothered their companions, so that there was not a Cauliflower left, and such a crop of tubers had seldom been seen. Perhaps the mode of planting had something to do with it. The trenches were made about eight inches deep, and then about three inches of old tan from a Pine pit were put in, and the Potatoes planted in that; then the earth pulled in upon them. There were scarcely a dozen but what were a fit size for table.

As to the disease I am of Mr. Weaver's opinion, and think that if we had taken up our crops before the rains in August we might have saved them. For instance, I had a square of the *Ash-leaved* and the same of the *Regents* in my garden, both planted at the same time—the 10th of March. One half of each square was taken up the first week in August, and never since have I found one diseased tuber amongst them, nor, at the time of taking up, more than a dozen bad tubers of each sort.

The remaining halves were not taken up until the middle of September, and quite half of them were then diseased, and since then I have looked them over twice, and both times found several of them bad.

I have noticed several times that the outside row was the most free from disease, and if it could be thoroughly proved I think we should have considerably less of the disease by planting single rows. They would then get more light and air.

My mode of planting is to trench the ground in autumn, and let it remain until I want to crop it, and I then take a fork and throw down the ridges as far as the crop is to go. I then make a trench about six inches deep with a strong hoe, plant the Potatoes, and cover them in with my feet as I go from one end to another, and finally draw a rake lightly over the surface to give a neat appearance. The rows are two feet apart. I always find the Potatoes come up more regular than by the dibbling system, as then some of the sets get buried deeper than the others.—S. TAYLOR, *Swaffham, Norfolk*.

POLMAISE HEATING.

In the system of heating called "Polmaise" (where is Polmaise?*) there appears to me one great fault, which, though at first sight it may appear to effect an economy in fuel consumed, is scarcely likely to be productive of food to vegetable growth. I have not had much experience in the matter, but have had some, so I may be in error, and am quite open to receive instruction from those better informed; but it does not seem *natural* to me that the same air should circulate time after time throughout the greenhouse, and such unwholesome circulation appears to be the foundation of "Polmaise." From the temperature obtained it is very clear that, at times, the iron plate forming the furnace top is exposed to very great heat, for which my experience would not induce me to use a single casting for the whole, as large castings are, when exposed to uneven temperatures, very liable to crack. As the draught into the chimney will be stronger than that into the warm air chamber, there need be no fear of sulphurous fumes from the coke, which, however, may be entirely "laid" by sprinkling over the coke a handful of common salt.

I would suggest whether it would not be economy, both in bricks and heat, to make the chamber longer, and, instead of carrying up the chimney at the right hand side of the furnace mouth, to build it against the end wall of the greenhouse, whereby that end would be to some extent *extra* warmed. If cast iron is used instead of clay tiles, a coating of sand an inch or so deep will be found of advantage. Our own greenhouse is warmed with heated air in a very simple yet efficacious manner. In the cellar underneath a small fur-

nace is built on Arnott's principle, the smoke flue from which is carried the length of the greenhouse, and built up with the gardener's cottage probably forty feet, the draught of which can be further regulated by a damper placed after it has passed the greenhouse. The top of the smoke flue is covered with large flat tiles, forming the bottom of the hot-air chamber, the warm air from which enters the greenhouse through ordinary circular ventilators, which can be opened or shut at pleasure.—SUBURBAN.

"WHAT SEEDS AND PLANTS SHOULD I TAKE OR SEND TO AUSTRALIA?"

WE are asked this question occasionally by intending emigrants and the friends of settlers in Australia, and we have generally answered, that all seeds, and plants, and trees, fruit trees and all others which do well in British soil, will do equally well there, and some kinds may be expected to do better there than in our most favourable localities. Through the kindness of the Messrs. Low, of the Clapton Nursery, we are enabled to-day to give a glimpse of the other side of the question, and to show what things have been recently sent home for by British gardeners and others in the nursery and seed trade at Melbourne.

A married gardener who went out in 1854 writes thus to Clapton:—"Your testimonials have been of great service to me here. We arrived safe in Adelaide on the 6th of January, 1855, the hottest part of our summers here. For the first few weeks I thought we should be roasted alive, the thermometer, in the sun, being often above 130°. I soon got a gardener's place with the head of a highly respectable firm in Adelaide, with whom I remained till June, that is, the winter of 1856, when I thought to better myself by coming to Melbourne, where your testimonials soon obtained for me a good situation under Mr. ———, in the centre of the Victoria Gold Fields. He is making a large fruit and forest nursery here, which I have no doubt will be a profitable undertaking, as gardens are rapidly forming in every part of the colony, and timber, such as it is, is recklessly cut and burnt in every direction. I am sorry I have not been able yet to send you any native seeds; but the truth is, my situation at Adelaide was in the midst of a cultivated district, and my time was fully occupied in my new place, but on these hills I have a better chance. I have seen already (14th September), the following coming into flower:—Acacias, Boronias, Eriostemons, Eucalyptus, Hardenbergias, Pimeleas, &c."—P. D.

The nurseryman that is to be "on these hills" writes as follows:—"In giving you this order I have before me THE COTTAGE GARDENER, No. 265, of the 27th of October, 1853, referring to two shipments to New Zealand, together with the corroborative testimony of my gardener in favour of your successful way of packing and arrangements for such consignments, and, therefore, I shall leave the selection to your better judgment, and only remark, that I should wish you to add assortments of Hyacinths, Narcissus, Jonquils, Crocuses, Anemones, Ranunculuses, Tulips, Gladioluses, Iris Hispanica, a choice collection of fruit trees, of Camellias and Roses, of flowering shrubs, the best and more common hardy trees in England, and best old English garden plants (*hear, hear*) to the amount of ———, all charges to Melbourne included. Should you be further able to preserve and pack European forest-tree seeds in such a manner that they are not injured by the journey in their growing capability, I wish to dedicate a further amount of ——— to a collection of Oak, Ash, Birch, Beech, Lime, Horse and Sweet Chestnut, Elm, Alder, Sycamore, Larch, Pine, &c., seeds. The best seasons for sending the seeds, the bulbs, and the different kinds of plants I shall leave to you to decide, but send by the fastest mail clippers or steamers to Melbourne.

"As to the amount of these shipments you will please to draw on me at ——— on sending invoice and bill of lading.

"Mr. D. tells me that he promised to send you a collection of Australian seeds, but in his former situation in South Australia he had no opportunity to do so; here this season, however, I shall join him, and do our best to oblige you.

"P.S. Should the *Kent* of the Blackball line be ready

* Near Stirling, in Scotland.

to sail, she might furnish the best opportunity for shipping. Please to send me also a good lot of seeds for stocks for the different kinds of fruit trees, and seeds of wild Roses and Briars."—G. H.

POTTED PLANTS IN WARDIAN CASES.

I HAVE just been reading Mr. Beaton's remarks on the right way of having Wardian cases. The plan is excellent for those who can afford it, but for those who, like myself, cannot, it is useless. What we want is a manual something in the style of "Greenhouses for the Many." Such a manual for the management of Wardian cases, with a few designs for cheap cases, and a list of plants adapted for growing in them, would be hailed with delight by hundreds who wish to grow Ferns, but do not know how to go about it without making it an expensive affair.

I have grown Ferns in cases these six years past, and at first I lost a great many. Now I grow them in pots the plants are healthy, and I have not lost one for a long time, and I have raised plenty of seedlings.

Many people may object to pots, but we grow plants in pots in our windows and greenhouses, and why not in our Fern cases? It certainly does not look so pretty as rock-work and all that sort of thing; but if Ferns are your object, that is the way to have them. You can get at the plants much better, and if anything is wrong you can set it right, and by a little management the pots may be entirely hid by the foliage.—FELIX MAS.

HOYA PAXTONII.

In page 202 of the present volume of THE COTTAGE GARDENER I promised to report to you which is the best *Hoya*, and now that I have a little spare time I will try to fulfil that promise. I certainly think that the best of all Hoyas is one that goes under various names in the trade catalogues. Some have it as *H. bella* of Van Houtte; others as *Cyrtoceras Paxtonii* and *H. Paxtonii*, which last, I think, is the right name, for I cannot think that it is a *Cyrtoceras*. I believe that this *Hoya* was sent out by Van Houtte for *H. bella* about the same time that the true *H. bella* made its appearance. However, I happened to obtain both about that time, and grew them side by side.

Hoya Paxtonii is easily distinguished from *H. bella* by its having a longer and more sharply-pointed leaf than has the *bella*. The foliage is of a peculiar light-green colour, and is not so thickly set on the branches. It also has a very graceful weeping habit of growth. Even when the branches are tied up to neat sticks it will adopt this weeping form as soon as the branches get above the supports. Thus it is quite distinct from *H. bella*, for I do not know a plant with such a dark, heavy foliage as *H. bella* has when in good health.

I have no doubt that if an amateur were to see this plant blooming in a small state he would think it not worth growing by the side of *H. bella*, for such was my thought when it first flowered with me; and for the first two seasons I even promised it a place on the rubbish-heap. Manage it in whatever manner I could think of, I could not get it to assume that fine, dark, healthy green foliage which *H. bella* did. In fact, *H. Paxtonii* looks, when in perfect health, as if it were sickly and water-logged. But it is for this peculiar light-green foliage that I recommend it as the best; for bear in mind there is no perceptible difference in the flowers of this and *H. bella*, but when in bloom and placed side by side, then it is that *Paxtonii* shows itself to advantage.

The way to prove the truth of what I say is to place the plants upon the front shelf of the show-house, and walk away a few yards in front of the house, where you will soon lose sight of the flowers upon *H. bella*, its dark-green foliage drowning them; then walk as far again from the house, and you will be able still to see almost every flower upon *H. Paxtonii*; for its light-green foliage seems to set off the bloom to the best advantage.

I saw a plant of *Paxtonii* last summer a yard through and

rather more than a yard high, completely covered with bloom, and a more noble object I never saw.

Another superior property is its hardier constitution; for I have found it to stand the winter in a greenhouse, and it will grow tolerably well in any warm house or pit where the house is closed up with a little sun heat in summer; but I have treated it through the growing season the same as *H. bella*, with the exception that I did not sift the soil for it, as I recommend to be done for that plant. For any one in want of a *Hoya* that will make a good plant and that will stand common-place treatment, *H. Paxtonii* is the plant; but he must make up his mind to grow it into a moderate-sized plant before it will show its true character. Afterwards it will keep in good order for years by a little cutting-in and a small shift annually.—W. DYMENT, *Headingley, Leeds*.

ASSOCIATIONS OF GARDENERS FOR MUTUAL RELIEF AND INSTRUCTION.

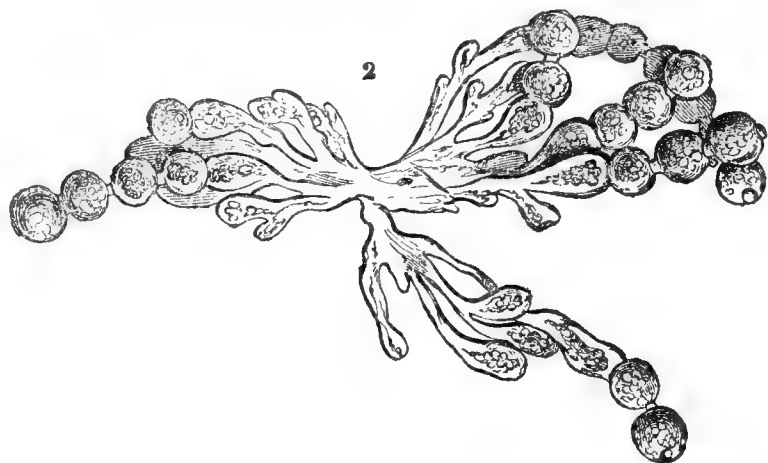
I DO not know I ever read in the columns of your interesting paper (and I have read some hundreds) an article that gives me so much pleasure as the one furnished you by that industrious, intelligent, and philanthropic man, Mr. Brewer, of Pine Apple Place, respecting a Gardener's Society he has established for the relief of our much-neglected race when sickness, or adversity, or misfortune befalls us. Whatever he takes in hand is generally crowned with success. I happened to know him twelve years back, but have not seen him since. He then established in the neighbourhood where he lived—at Messrs. Noble's, Fleet Street—a similar society of a penny a week to relieve poor, distressed people of good character, but brought down to poverty through disease and old age. He was Secretary of that, and a better regulated or more successful society cannot exist. It has relieved hundreds of distressed poor, and still continues to do so, with a fund now of between twenty and thirty pounds at the Society's disposal, and collected by pence principally. It also has caused another one to be started very near, and on the same principles as that. This more recent Society has already relieved distress to the amount of forty pounds in two years. When Mr. Brewer left the neighbourhood he was presented by the Society with a testimonial for his honorary services. I know these facts, for I belong to both Societies.

His scale of relief according to the funds is excellent, and I trust, when this comes to be read by our town and country nurserymen and market gardeners, they will follow the example by establishing similar associations among our hard-working, industrious class. I tried some years back to bring all the "square gardeners" together in the metropolis for the same object, but was not so successful as Mr. Brewer, for I broke down in a twelvemonth. I also wanted to discuss matters relating to the floriculture of the squares, such as informing each other as to what would do best in London smoke, and make the squares look more like gardens than at present; for, for the most part, each is a shrubbery of half-starved, sickly Lilacs. I wished to introduce more flowers, and to impart to each other any knowledge our metropolitan experience had taught us; but this attempt to bring them together amicably was perfectly useless. I could not get them to take any interest in it, so I gave it up. I have half a mind to try again, for our squares ought to look much better, and might do so with a little perseverance. I am persuaded that the inhabitants of our numerous squares would be much better pleased to see them well filled with flowers all the summer than as they are at present, with here and there a half-leafless Lilac, scarcely showing a bloom. It would be the means of their becoming more liberal to the gardener, and of laying out more money to furnish plants for improvement.

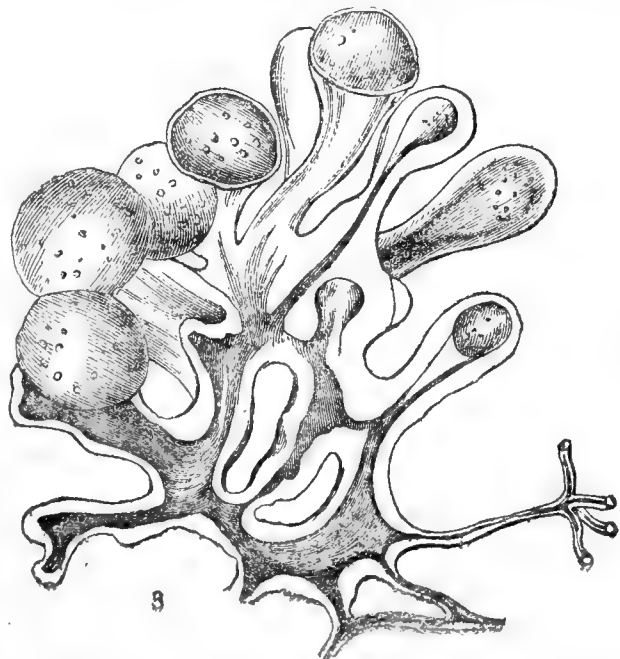
I am satisfied, from my own experience, that by such an association enabling us to impart our knowledge to each other by friendly meetings, we might, with little more expense to the inhabitants, make the squares an ornament to this great metropolis.—SAMUEL BROOME, *Temple Gardens*.

ON THE WHITE RUST OF CABBAGES.

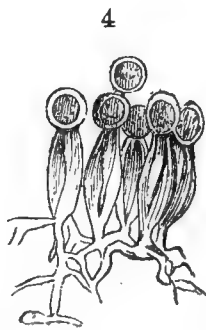
By the Rev. M. J. BERKELEY, M.A., F.L.S.

1. *Cystopus (Uredo) candidus*, Lév., on Cabbage, natural size.

2. Threads of spores, with their sporophores and mycelium magnified.



3. Spores, sporophores, and mycelium from a young plant more highly magnified.

4. Ditto, from *Uredo Amaranthi*, Schwein, magnified less than the two preceding. The figure is taken from a dried specimen, and consequently exhibits a less succulent mycelium.

THERE are few natural groups of plants which have not their own peculiar parasite, which lives and decays, indeed, for years unheeded by the common observer, until some season peculiarly suited to its growth arrives, when it is too abundant or noxious to escape the most careless. The present season has been very productive of different kinds of blight. Scarcely a bramble is to be seen which is not completely discoloured by rust; the withered aspect of the Bean crop has attracted general notice; not a row of garden Peas but is covered with *Erysiphe*; and the ravages of *Botrytis infestans* on the leaves and stems of Potatoes are unhappily too notorious and fatal. In my own district nothing can have been more general, and in many cases pernicious, or even destructive, than the white rust (*Uredo candida* of authors) which is so common on cruciferous plants. They have, indeed, several other parasitical enemies; but this is, perhaps, the most general, and extends its visitations, either under the same or under very slightly different types, to several other families of plants. It has been found on plants belonging to several divisions of Compositæ, on Euphorbiaceæ, Portulacæ, Malpigiaceæ, Chenopodiaceæ, Convolvulaceæ, Caryophyllaceæ, Capparideæ, Amaranthaceæ, and possibly on species of some other families to which I cannot at present refer. Its geographical range is also most extensive, extending in the northern hemisphere from high latitudes as far south as South Carolina, and it occurs in the Falkland Islands on *Arabis Macloviana*. It is besides frequently accompanied by *Botrytis parasitica*, which there is much reason to believe is sometimes as pernicious as its nearly ally *B. infestans*.

It was in a species of the last-mentioned natural order (Amaranthaceæ) that in the spring of the present year my attention was first turned, on the examination of specimens received from the Rev. M. A. Curtis, of Society Hill, South Carolina; to the peculiar structure of this parasite; and my observations have been at once confirmed and anticipated by my excellent friend Dr. Léveillé, in an arrangement of Uredineæ, in a late number of *Annales des Sciences Naturelles*, which bears date December, 1847, but which was not published till some months later.

There was no difficulty at the time in procuring fresh specimens for examination, for so early as the end of March not a Cabbage or Colewort in my garden was free from the white rust; and as the season advanced, the young as well as the nearly mature plants became affected, presenting frequently a disagreeable leprous appearance, deranging their growth, and sometimes materially affecting their produce. At length, in the month of June, the flowering plants exhibited the disease to an extraordinary degree, and became so strangely distorted, that on a cursory inspection it would have been difficult to say to what species a gathered specimen belonged. Every part of the flowers had become immensely enlarged; the leaves of the calyx and petals assumed a gigantic size, the latter retaining in some measure their proper yellow tint; the stamens, too, were distorted, and the pistil projected beyond the now persistent

blossom, and instead of being as usual narrow, was a quarter of an inch or more in width, and very much compressed on the sutural side; and on opening the young carpels, their inner surface, and in some cases even the placenta, was infested with the white spots of the rust. In some cases every flower and pod was affected; in others the mischief was confined to two or three upon a stalk, so as not to prevent entirely the production of seeds. Nothing, indeed, could well present a more singular appearance than the plant with its swollen and distorted leaves, its occasionally abortive panicles, of which nothing remained but rose-like tufts formed by the gouty stem leaves, and, above all, the powdery heads of buds and the pendant fleshy flowers as large as those of *Albica major*, and with somewhat of the same green and yellow aspect.

I was greatly disappointed, on a minute comparison of the flowers and unripe seed-vessels with those in a normal condition, to find that there was no essential derangement of the fundamental structure, no metamorphosis properly so called, but simply an enlargement of all the parts, and a general looseness and hypertrophy in the cellular tissue, arising partly, perhaps, from the stimulating effect of the mycelium, and partly from the mere mechanical agency of its growth. The dissepiment alone was in proportion far narrower than usual, and extremely delicate, as though the placenta had been enlarged at its expense. There was nothing to throw any light on the true import of the parts of the carpels, the arrangement of the cellular structure being absolutely the same in both instances, though infested everywhere with the mycelium.

It should be observed, that wherever the mycelium did not penetrate, everything presented a perfectly natural appearance without any indication of disease; nor, indeed, is there any reason for supposing that a diseased condition of the tissues preceded the growth of the fungus, which in that case would be a mere after-organisation. Were the fungus in the first instance external, there might be some shadow of foundation for such an opinion; but the cuticle is perfectly closed till the mass of spores has burst through it, and the sori, as noticed above, made their appearance in the closed cavities of the carpels exactly as *Botrytis infestans*, as observed by Payen and myself last autumn, in the fruit of the Tomato, where there was no immediate communication with the atmosphere. And the case is even stronger in some other fungi, especially in *Granularia viola*, Sow., which has not been observed for many years, and had been quite misunderstood till its appearance in Captain Munro's conservatory, near Clifton, last winter, and (as recorded by Professor Forbes*) in Portland during April of the present year. In that curious production the spores are deeply seated, and the sori do not burst, if they burst at all, till the whole parasite has been long perfectly developed.

The influence of fungi, however, on perfectly healthy tissues is now an established fact. The case of bunt is a well-known example, the spores of which constantly reproduce the disease; and if instances are not sufficiently satisfactory in the vegetable kingdom, we have only to turn to the facts recorded respecting the origin of the disease of silkworms, called Muscardine, from the spores of a species of *Botrytis*, to show that fungi do not grow exclusively on languishing or decaying organisms. Prejudice to the contrary is so very strong and general, and is still in ignorance of facts bearing on the subject, so often put forward, that the real state of the case requires to be frequently pointed out; especially since incorrect preconceptions on this subject may be of very evil consequence in minute research as to the origin of disease both in the animal and vegetable kingdom.

Almost every one is now agreed as to the real nature of Uredinæ since the observations of Lévillé and Corda, which have been confirmed by a host of microscopical observers. Only a few German speculators, in their zeal for spontaneous or equivocal generation, still adhere to the views of Unger, that they are mere transformations of the issues from which they spring. An incidental observation to this effect occurs in a late number of the *Botanische Zeitung*.

* In *Viola odorata*, when attacked by *Æcidium viola*, I have seen the stipules assume the form of perfect leaves in consequence of the general luxuriance of the plant.

The structure of the white rust of which we have been speaking differs so much from that of most other allied forms, that it is strange that it should not have been ascertained before. There is, indeed, in the work of Unger, on what he calls the Exanthemata of plants, a correct figure as far as it goes, tab. VI. f. 32, but he has merely given the cysts from which the spores spring, each terminated by a single globose spore. This is the more remarkable, because he was the first to describe the spores of *Æcidium* as arranged in moniliform threads, a structure which has been beautifully illustrated by Corda, and which any one can easily convince himself is correct. The moniliform threads are not less visible in the white rust, and the spores are connected with each other by a short cylindrical process exactly as in some species of *Oidium*. The best way to observe the structure, as, indeed, is the case with all epiphytal fungi when practicable, is to make a thin vertical section which will exhibit not only the necklaces of spores, but the obovate cysts from which they spring, and the curious, irregularly branched, often thick and nodose greenish mycelium, which, as Mr. Broome correctly observed to me, resembles more in form and general habit the structure of *Hæmatococcus Almanni* than any other vegetable substance. Besides this irregular thick mycelium, there are also fine mucedinous threads which penetrate deeper into and amongst the tissues of the matrix, and resemble the more usual form of mycelium in Uredinæ. The figure of the general structure of the species is by Mr. G. H. Hoffmann, that of the younger state by Mr. Broome, and that of diseased panicles of a sugar-loaf Cabbage by Miss A. Vidal, who has made some pleasing contributions to Miss Henslow's "Ocean Flowers."

Dr. Lévillé has described the genus under the name of *Cystopus* with very correct characters. It is to be wished, however, that he had adopted Schweinitz and Rabenhorst's sectional name of *Albugo* (Rab., Crypt. Fl., Vol. i. p. 13), which is far more expressive; and, as a general principle, sectional names ought certainly to be adopted when the sections are raised to the rank of genera. Whether there be more than one species of *Cystopus* is, perhaps, doubtful, though the spores differ somewhat in form. Now that the true structure of the genus is ascertained, attention may be turned to the question with greater probability of a satisfactory result.

I observe in conclusion, that *Cylindrosporium* of Greville has nothing to do either with the present plant, or what Unger has referred to that generic name. An opportunity of inspecting a perfect authentic specimen of this plant, which does not seem to have been observed by any other mycologist, has shown that it belongs to another group, the spores, which are very minute, oozing forth in irregular masses, and in fact allied to *Nemasporea*. Dr. Lévillé's observation, then, as far as Dr. Greville's plant is concerned, requires correction.—(*Horticultural Society's Journal*.)

FERNS AND LYCOPODS IN A GLASS CASE.

THE description of my case, with its miniature rockery of Ferns and Lycopods, which you inserted in THE COTTAGE GARDENER, No. 421, has elicited from your readers questions touching its management, &c. For their information I send the following additional particulars.

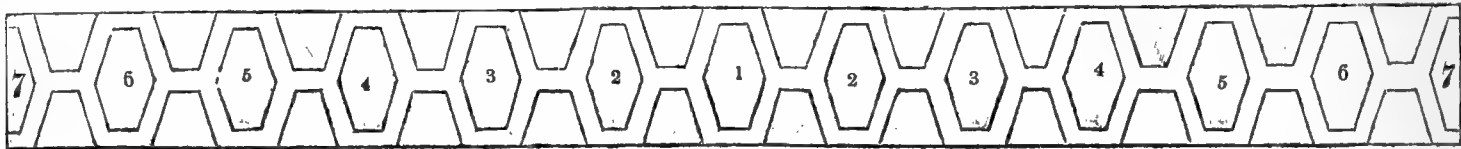
The rockwork consists of coral, shells, quartz, and stones, fastened together by plaster of Paris, having as a basis a zinc bottom, the parts of which are not covered with the rockwork, being overlaid with moss. The Ferns and Lycopods (enumerated in the above No.) were inserted in a compost of sandy, fibrous peat, turfy loam, and leaf-mould, in which they have succeeded admirably, due regard being paid to ventilation, frequently admitting air, and giving water judiciously, and, when not too powerful, submitting the whole case to the influence of the sun. With this treatment the plants have grown most satisfactorily, and are now covering the rockery with their graceful foliage and evergreen verdure, which cannot fail to gratify the eye that rests upon it.

—R. P. C., Eccleston Parsonage, Prescott.

QUERIES AND ANSWERS.

FLOWER BORDER FOR A TERRACE WALK.

"I have on the west side of my garden a long slip of ground, 145 feet long, between two old, ruined walls, from three to four feet high. On the east and on the level of the top of the wall I have a terrace walk—to the west an open country view. After drawing a straight line in front of each wall I have only fourteen feet in width, which I want to lay out in flower borders. I inclose a plan which I have pre-



[This figure shows the *best way* of putting the greatest number of kinds of bedding plants together in order to prove them as to their merits in every respect. The proof border at Shrubland Park, in front of the Swiss Cottage, is on the same plan since 1840, only that the side-figures are triangles and the centre beds are in circles, which make the two end figures to be half circles.

The best way to plant the present plan, as a *regular flower garden*, or as a border round a large flower garden, is to have the centre row in scarlet and yellow alternately, the front row in white and black alternately, and the back row in lilacs, pinks, and purples, in shades.

The plan looks very ordinary on paper, but if properly planted and well attended to, we never yet saw a better plan for the very richest display which can be made on the simplest principle.

The way we would plant it would be to have 1 in *Calceolaria rugosa multiflora*, the best kind of *rugosa*; 2, 2, with *Tom Thumb Geraniums*, edged with *Baron Hugel*; 3, 3, as 1; 4, 4, *Tom Thumb* edged with *Golden Chain*; 5, 5, as 1; 6, 6, *Tom Thumb* edged with *Mountain of Light*, or whichever is the most silvery, and 7, 7, in deep blue or as 1. The whitest Verbena and the darkest Verbena alternately in front of these, say *Emma* for the darkest, and the white Verbena which does best on that soil. The back row should be chiefly in shades of pink and purple, say some *Petunias* and some *Verbenas*, and towards the ends bring in a lighter Verbena—the nearer to a lilac the better—and have it opposite *Emma*. The reason is to match the edgings round the centre beds, which deepen towards the centre from both ends.

The next best plan would be to be without edgings to the centre *Geraniums*, and to have three sets of scarlet *Geraniums*, thus:—2, 2, large, old *Tom Thumbs*; 4, 4, young plants of *Cerise unique*, and 6, 6, with any of *Baron Hugel's* seedlings, as *Bishopstow Scarlet*, *Dazzle*, *Tetworth Seedling*, *Mrs. Rickets*, &c., &c., or three-year-old *Baron Hugel*. The meaning is to have all the plants of *Geraniums* of as nearly the same size as possible in all the beds; but the *Calceolarias* may be higher or lower than the *Geraniums*, if every bed of them is nearly alike in height; then the front and back rows to be of as many different kinds as one could muster, only not to have any of the plants higher than the *Geraniums* and *Calceolarias*. A whole collection of *Verbenas* might be set all round with two kinds in a bed, or even three kinds, or all the low Ivy-leaved *Geraniums*—*Campanula carpatica*, blue and white *Gazanias*, all *Pansies* except yellow ones. There must neither be a real yellow or scarlet bed in the sides.]

OBTAINING DEEP-COLOURED CHINESE PRIMROSES.

"Can you inform me how the beautiful deep shade in *Primula sinensis* is produced? I buy seed annually, and am told when purchasing it is precisely the same as plants shown, which are rich and deep in colour, but mine always come poor and washy. I give sheep manure in solution occasionally, but cannot produce colour like those I see."—THOMAS COLLIN, JUN.

[It has so happened that two correspondents have written at

pared, and shall be much obliged if you can suggest any improvement. The narrow width makes many patterns, which would be preferable, inapplicable. You will observe that from the terrace I look down upon the beds.

"I propose filling the side-beds with scarlet *Geraniums* and *Verbenas*, and the centre beds with purple, white, and yellow *Verbenas*, *Lobelia gracilis*, *Heliotropes*, and *Calceolarias*, but I always find it difficult to fill a bed with *Calceolarias*.

"As the pattern requires accuracy I propose to use edging-tiles instead of Box."—N. B.

the same time for similar information, namely, how to obtain *Primula sinensis* with dark-coloured flowers, such as may be seen any fine spring morning in large numbers in Covent Garden.

The secret—if there is one—consists in saving seed from the darkest and best formed flowers. Every amateur to be sure of this ought to save his own seed, though I have had as good seed from a seedsman as any I could save myself. Even with the utmost care some will come pale and starry; just as many varieties of florists' flowers raised from seed go back, as it were, to a state of nature. Therefore let not the amateur be discouraged if some of his *Primulas* appear in their native wild form. In saving the seed also take care to select the best flowers only, I mean even on the same plants. Nip off all that are small, ill-shaped, and pale-coloured. Pure white ones, if large and well-shaped, are in my opinion quite as beautiful as the rosy red ones. Here, again, is a point to be attended to. If the pollen of a white *Primula* falls upon, or is carried by bees or other insects, upon the stigma of a dark-coloured *Primula*, nine-tenths of the seedlings raised from that plant will be as various-coloured as possible—some will even come variegated and spotted. Hence no white ones should be allowed in the house where seed from the dark varieties is to be saved, and *vice versa* no dark kinds should be kept where white seedlings are wished for.

Then, again, a great cause of a high colour is plenty of light. *Primulas* should always be grown on a shelf just far enough from the glass to prevent the leaves touching it. Light, it is well known, is necessary to produce colour. Even green leaves will become white in the dark. Neither of our correspondents mention where their plants are placed, and therefore I may reasonably conclude that they are a considerable distance from the glass. To bring high colours light is absolutely necessary. I do not imagine for a moment that water impregnated with manure will give a better colour to one naturally washy pale. A plant well grown in a light compost will undoubtedly produce larger flowers and more clear colours; but (I must reiterate) the plant to bring out its full colour must be placed as near to the glass as it possibly can be without injury. I have frequently noticed that the best and highest coloured flowers, when grown on a shelf, deteriorated when brought down and placed on a stage or platform some two or three feet from the glass.

The best compost for this plant consists of good turfy loam and decayed leaves in equal parts, with a little heath-mould and sand added, sufficient to give it a sandy character. The season, too, has a good deal to do with the colour. I have always observed the best colours to appear about May or June, and that is the season to save seed in. Earlier or much later the colours are much weaker.—T. APPLEBY.]

LOPPING AN OLD MULBERRY TREE.

"I have a very old Mulberry tree in an old garden. It is chained, propped, and carefully covered with sheet lead, where split, which it is to a considerable extent in the middle. It is still healthy, and bears wonderfully. A large limb has so increased in size as to injure the other branches, and make the tree very much on one side, besides being evidently too heavy, and projecting beyond the grass, which

causes the fruit to fall in the walks and on borders. Now, may part of this limb be taken off without injuring my old tree?"—H. A. S.

[Do not on any account cut off such a limb as you have described. You will never have such another in your lifetime, or in the time of the generation after you. If it is so large as to give evidence of splitting at "the fork," and of endangering the safety of the tree, all you have to do is to put a prop under it, and to thin it by lopping off some of the branches which can best be spared, either from the quantity of diseased bark upon them, or from being misplaced and injurious to others. You may easily do so, to lighten the weight of the limb, without injuring the tree, and by reducing the quantity of wood on one side you will throw more vigour into the tree, and cause it to develop a greater quantity on the other. Let the wounds be covered with a plaster of pitch, rosin, and bees-wax, to exclude the action of the weather.]

CUTTINGS OF *DIELYTRA SPECTABILIS*.

"Last summer I struck about a dozen cuttings of *Dielytra*. The old root is now growing fast, but as yet there is no appearance of life in my young ones. An amateur of my acquaintance, and one who considers himself a knowing one, tells me that last spring he could get none of his to grow; perhaps you will tell me how to treat them."—A CONSTANT SUBSCRIBER.

[This question turns on the time of the summer the cuttings were struck, and on how they were afterwards nursed. If they only had time to make the first small fibrous roots they are all dead long since; but if they had sufficient time to make fang roots, like Radishes, there is no more fear of them doing well than there would be about tiny little Carrots or Parsnips, and the best thing you can do for them is just to let them alone, and think no more about them till you see them above ground. Of course they are out of doors, either in a pot or in the border. You need not trouble yourself about them; if they are alive they will come as sure as March, and if not, you will be as "knowing," or rather more knowing, than your "acquaintance," for you will never strike them so late again in the summer. The very first start after blooming is the right growth and right time to take cuttings of *Dielytra spectabilis*.]

PLANTING AN ISLAND IN A POND.

"Will you give me a hint as to what to do with an island, about thirty yards by twenty yards, near Ledbury, standing in a pool about two acres in area, and square in shape. It is in front of the house, but on lower ground. On the island is one tall Scotch Fir and an Oak. Our soil is of the highest description of rye land, and the new red sandstone rock is so near the surface as to crop out in places. In others, on the island, for instance, there may be three feet of soil."—R. P. H.

[We noticed that the Alder and some kinds of Willows and Poplars grew vigorously on the "flats" along the Severn and Wye, on either side of you, and along the Ledbury Canal, in front of you; also behind you, round the "lake" in front of Eastnor Castle; in all of which the roots were as much in water as they would be on the said island; therefore, the safest way would be to plant such kinds as do well in your part of the country under similar circumstances. We would also plant half a dozen of the deciduous Cypress on the island; it grows naturally in swamps; also some common Rhododendrons, in peat from the common in front of the parish. We once botanised over that common and in the neighbourhood, and the rarest thing we found was *Ornithogalum Pyrenaicum*, on a bank by the road side, and we think the left-hand side, going from the rectory to the church; but we do not remember to have seen the pond or island, only a winding, marshy brook.]

FUMIGATING BEES.

"I was much amused with Mr. Hibberd's account, in a recent number, of the adventure of "Jenkins" in bee

keeping, or rather, bee destroying. I am sure I am not "Jenkins," as I never saw or heard of Mr. Hibberd before seeing his name attached to the communication spoken of. But during the past summer I have had one or two adventures something like those of Jenkins, though not quite so tragic in their consequences, and I daresay there have been many "Jenkinses." So that while Mr. Hibberd has amused us by telling us what Jenkins *did*, I, for one, should feel thankful to be told what he *ought to have done*. I have found, on one or two occasions, the bees very provokingly decline to become insensible, notwithstanding the application of any quantity of the fumes of the fungus sold by the London dealers in bee apparatus, and this more especially when the bees have been disturbed before applying the fumigator. What is the probable cause of my failure? Are the bees when agitated less susceptible of the fumes of any narcotic? Is it probable that when the bees begin to fall they fall in such numbers as to stop the mouth of the fumigator, and so prevent the further ingress of the smoke, so that the bees not yet under its influence remain sensible and active? Though comparatively an inexperienced apiarian, let me give a word of advice to all Jenkinses, and perhaps, indeed, to all bee keepers, *never have anything to do with bees in the dusk, or by candle light*. When wanting to fumigate them, stop them up over night and have broad daylight to work by; then, if unsuccessful, there is every chance of remedying the effects of inexperience or carelessness.

"Has not Mr. Eaglesham, of Stewarton (whose advertisement I see in your last number), some agent in England for the sale of his bee boxes, which, if good, seem so very cheap? I and, no doubt, others who would desire to have them, are deterred by the cost of carriage. Would it not answer for him to appoint an agent in Birmingham and London?"—A COUNTRY CURATE.

[It may be well to remind you that there is a time and a season for all things. In reply to your question, "What ought Jenkins (p. 243) to have done with his bees?" we have only to say to *have let them alone*, undisturbed in any way, till the close of the season for working. Even then we would reiterate our advice not to attempt the difficult task of removing a family of bees, combs, and stores, and all, into a new dwelling. This is a widely different affair to the autumnal junction of two or more weak stocks to form one strong family in an already-furnished hive. We have frequently had occasion to caution the novice in apiarian practice on this point, which, unless in very skilful hands, can only result in disappointment. Any new hive, no matter of what kind, is best peopled by hiving a swarm into it as early as possible in the season. We attribute the partial failure alluded to, perhaps, to a certain degree of inexperience; to something wrong in the narcotic employed, or defective apparatus in applying it. There is no difficulty under skilful management, and at the proper period. As respects Mr. Eaglesham's hives we have had no experience in their use; he must be supposed best to understand his own interest in vending them.]

TRANSFERRING BEES.

"I want to know if I can, within the next three months or so, transfer a hive of bees from a straw hive into a glass box. The box itself cannot be inverted in the operation; but the top can be taken off, and the loose comb bars lifted out. I want at the same time to shift the bees about forty feet in the same garden."—BIRMINGHAM.

[You will perceive that much of what is said to "A COUNTRY CURATE" is equally applicable to the case you submit to us. Unless you are desirous of emulating the martyr "Jenkins," let your bees go on quietly to work, and stock your new hive with a swarm. The bar hive you mention undoubtedly offers facilities for removing the combs not afforded in a common one; but the advantage is of little avail where the old and new hives are of different forms or diameters. In other words, the bars must fit equally well in either, so that the combs may remain attached and unbroken, the interspaces also being unaltered, for this is by no means an unimportant point to be attended to. The removal of your hive should have taken place a month or two ago whilst the family were inactive. At all events delay increases the

risk, for any shifting of position, however small, is attended with more or less loss of bees, unable to find the changed site on returning home. Even a few inches will sometimes puzzle them when in full work.]

TO CORRESPONDENTS.

EARLY POTATOES (*Lancashire Man*).—Inducing Potatoes to sprout or "sprit," as you term it, by exposing them on a room floor, promotes earliness, but you must be wary of not having the tops frosted. If you wish very early *Peas*, grow *Sangster's No. 1*; and for your main crops, your garden being small, *Woodford's Marrow*, and *Hair's Dwarf-Green Mammoth*. For *Brocoli*, grow none but the *Walcheren*. If true, and a little is sown once a fortnight from early in March until the end of July, you may have *Brocoli* fit for cutting all the year.

PATHS OF COAL TAR (*A Subscriber*).—We never knew paths made of this and coal ashes. We have known it used with lime rubbish and gravel, and then enough of the tar is used to render the mixture of the consistency of stiff mortar.

LEGALLY REMOVING TREES AND SHRUBS (*Western Suburban*).—Our reply to "ZERO" last week answers your question. We shall be glad to see your plan.

STOCKING FLOWER BEDS (*W. H. S.*).—It is not possible to advise under the circumstances. The bed is too large for flowers, even in a duke's garden, except it were for a collection of Dahlias. At the lowest calculation it would cost you £5 to plant it with *Tom Thumbs*, at 20s. a hundred, or, if you take more stylish things, say ten guineas to plant one bed. Now, do you not see how impossible it is to say whether you ought to spend five, seven, eight, nine, or ten guineas on that bed, or merely ten or fifteen shillings in common Laurels and other shrubs, with a row of flowers all round. Fifteen shillings would do, but ten guineas would not at all be too much to make a gay bed of it. If the first row was of small *Golden Chain* plants, you would need 200 of them, at 9s. a dozen, or if you took a size larger, and only use 150 plants for the edging, they would cost 10s. or 12s. Five guineas is a small sum to edge your bed, let alone the body of it. And so with the second bed. But say what you can afford to lay out on these beds, and we shall tell you the best things for the money.

BELLADONNA LILY (*W. C. H.*).—As all the Belladonnas in cultivation are now in the midst of their annual growth, we conclude you received yours direct from the Cape, which you ought to have stated. At all events, our advice is given on such presumption. Plant them at once, but a pot is the worst of all things to begin with them. However, use plain loam, that is, without leaf mould, or peat, or rotten dung. If the loam is strong add a little sand to it, and bury the bulbs down to the neck; water, and keep the pots in the kitchen till you see the leaves just coming, that is, the bulbs are thus gently forced to make up for lost time. As soon as you see the leaves, remove the pots to the cool greenhouse, and allow them to stand near the front ventilators. The leaves will very likely be too weak to stand up by the time they are above half their usual length; to guard against that, put two sticks in each pot close to the side, and opposite fasten a piece of matting or worsted to one of the sticks, four, five, or six inches above the pot, and double it round the other stick; that is, take the two ends round and fasten them behind the second stick, and the leaves will be free between the tie and the sticks. That is the way to tie all bulb leaves.

WEST'S PROPAGATING CASE (*L. S. C.*).—It is the "Waltonian Propagating Case," made by Mr. West, Kingston-on-Rail. You will find a drawing and full description of it in our No. 389. A Ward's case served as you suggest would be a mere toy, and useless.

DRAINING (*J. M.*).—The slightest slope is sufficient to render the drains effective; but we cannot advise how best to arrange the drains unless we saw the place.

NAME OF PLANT (*J. Crossling*).—Your plant is *Sericographis Ghiesbreghtiana*.

WAX BEAN (*M. —, Clonmel*).—We do not know any plant so called. Can any of our readers inform us what it is?

BREWING.—A *Constant Subscriber*, and many of our readers, would be obliged by practical directions how to make good table beer, and stronger beer to keep twelvemonths—the quantities of malt and hops, &c. You can have Nos. 17 and 24 by sending ten postage stamps to our office with your direction.

PLANT AMONG GERANIUMS (*Harrie*).—The leaf appears to belong to some kind of Mallow, the seeds of the Mallow being in the mould in which you sowed the Geranium. Keep the plant for the present as it is, and at the end of April plant it out of doors, at some distance from the rest of your flowers; perhaps it will turn out a new plant.

VARIOUS (*A. G.*).—We know of no better mode of obtaining a milch goat than by advertising, but you will require two and a buck, or your supply of milk will soon cease. Move your Raspberries and Roses as soon as open weather will permit. Your *Cochin-China* chickens will grow fast enough in the spring, if they live until then. Your pullet, dropping her eggs is kept upon too stimulating food probably. Keep her upon boiled potatoes and rice for a week or two.

NURSERYMEN'S CATALOGUE (*A. F.*).—It is quite impossible for us to recommend any particular one. It would be unjust if we did; for every nurseryman has a Catalogue, and the majority differ from each other by mere shades of excellence. We noticed three that are really books. If you wish for one with the plants arranged according to the Natural System, procure that prepared by *W. Thompson, of Ipswich*. If you want a very copious one of *Flower-seeds* with descriptions, obtain *E. J. Henderson and Sons', of Wellington Road, St. John's Wood*. If you need one of *Vegetables and Flowers* get, also, that of *T. Kennedy and Co., Dumfries*; or, of *W. Outbush and Son, Highgate*; or, of *Messrs. Bess and Brown, Sudbury, Suffolk*.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

CERWE. February 3rd and 4th, 1857. *Secs.* S. Sheppard and D. Margetts, Esqs. Entries close January 15th.
KENDAL. At Kendal, February 6th and 7th, 1857. *Sec.* Mr. T. Atkinson.
N.B.—Secretaries will oblige us by sending early copies of their lists.

PRESTON POULTRY EXHIBITION.

For many months past this Exhibition has been looked forward to by the amateurs of the United Kingdom as "the" coming event that would specifically determine the relative superiority of not a few of the first prize-taking pens of Poultry in the Empire. The excitement thus caused arose in almost entire consequence of the truly unprecedented number of Silver Cups, the extreme liberality of the Preston and North Lancashire Poultry Committee offered for their Society's premiums. They were considerably beyond FIFTY in number! of beautiful design, each embossed in accordance to the class or variety for which it was specifically offered; and in common justice we must say, also, they were most undoubtedly of the *intrinsic* value assigned to them. No Committee could possibly deserve the high esteem and friendliness of all parties more than the Preston Committee; nought that mind could suggest, or manual labour fulfil, was withheld for the furtherance of the ultimate success of their undertaking; and thus, most undoubtedly, they were fully and justly entitled to a very different course of usage than that they *secretly* received from parties holding high position in society, and from whom certainly, as gentlemen, and even men of common integrity, we had undoubtedly reasons for hoping and for expecting a truly different line of conduct; we must add also, one far more calculated to support the true dignity and *respectability* of the Poultry world. All we will here add is, that so great and important a meeting as the Preston one cannot fail in rising to very great celebrity, if the Committee wisely continue conjoined for mutual and general interests, determine to act at once fearlessly, openly, and honestly, by their adversaries; for we fear not at all, "rectitude of conduct must eventually reap its own reward," and as certainly expose the malpractices of those who adopt measures for the furtherance of their individual interests, to which they scrupulously and sedulously withhold the identity of their own individuality.

The pens were arranged within the colonnade of the quadrangular area of the Corn Exchange, and also longitudinally in the building. In all they numbered 897, showing an increase of 57 as compared with the previous Exhibition. In the great majority of cases each pen contained three fowls. Some idea may be formed of the extent of the Exhibition when we remark that 1,260 yards of netting were brought into requisition, or nearly three quarters of a mile in length.

We have before observed that this Exhibition was very superior to its antecedent. The competition in every class was very excellent, excepting one. This observation needs no qualification whatever, and it is certainly much to say with regard to any Exhibition, and especially one of this magnitude, that throughout all the classes there was *only one* to which exception might be taken.

The *Dorking* and *Spanish* classes had especial claims to favour, and we think it more than probable that better specimens of either variety have *never* been exhibited in these classes. The latter were in great abundance, and included some very beautiful birds. The apparently most excellent of this class (No. 887) were, however, disqualified on the ground that they had been perfected by extraneous and unnatural appliances, having undergone the process of what is vulgarly called "shaving," which simply means "trimming." They were, notwithstanding, beautifully symmetrical birds, and, in the judgment of the uninitiated, would carry off the palm. The Judge, on ascertaining that this operation had been practised, was undoubtedly justified in withholding the award, and the fact of its being discovered (in some instances by the aid of a microscope) is an unmistakable manifestation of the carefulness with which he

discharges his duties, and his firm integrity of purpose. The process of "trimming," we are sorry to say, appears to have been resorted to in this Exhibition more than is generally the case; two pens being absolutely disqualified from this cause alone, although they were otherwise excellent. Several other pens, where the nefarious practice was not carried out to the same extent, were allowed to pass muster, simply from the fact that, although the Judge was perfectly convinced that they had been tampered with, *proof* was impossible.

The *Hamburgh* class was especially excellent in all its varieties, and the *Game* fowls exhibited were the most meritorious birds that have ever been witnessed. We rejoice in the fact that the days of cock-fighting, at least amongst the middle and higher orders of society, are, owing to the diffusion of knowledge and the consequent advancement of civilisation, numbered with the past.

The *Cochin-China* fowls formed a very meritorious class, and reminded one very forcibly of the very excellent birds that were to be met with at the time they were first introduced into Poultry Exhibitions.

In the *Polish* classes the black Poles, with white crests, have certainly *never* been excelled at any previous Exhibition throughout the country.

The *Bantams* mustered numerously, and were very excellent in character.

The *Brahma Pootras*.—The singular tendency of this class to "breed out" from an affixed standard was never more positively elucidated than on the present occasion. Although the colours have ever been various in this class, the most extreme case came under our observation, there being in the Exhibition a *white* one. A most excellent cock in this class also only received a simple "commendation" from the fact that it was vulture or falcon-hocked.

Amongst the *Hamburghs*, the perfection of some, or, indeed, most of the birds was very remarkable, the white ear-lobe being present in almost every instance.

The *Aylesbury Ducks* were worthy of the highest commendation; but

The *Rouen* breeds were not so commendable as some frequently to be met with, lacking, in a great degree, size.

In the class for any *Extra Variety of Ducks*, a pen of the "Penguin" species, exhibited by Lord Berwick, excited great attention from their singularity. We are informed that these are the first specimens of this variety that have ever before been publicly exhibited.

The *Pigeons* formed an attractive feature of the Exhibition, being beautiful birds.

The Judges were Mr. Hewitt, Sparkbrook, Birmingham, for all varieties except *Game*, which were judged by Mr. S. Foulds, Chowbent, and *Pigeons* by Mr. Hale, of Handsworth.

In the *Game* classes there is not a doubt that the *Game* Judge acted with the most *perfect* and unflinching integrity of purpose; we could not, however, view many of the decisions without regret, considering the specimens merely as exhibition-birds. It was evident "the pit" formed the ruling feature in his mind, and one to which in all cases it has naturally reverted; consequently, although, without doubt, the best "fighting" birds we found amongst the Cup birds, almost every possible description of *wrong* "matching," to wit, Red-breasted Cocks with Black-breasted Hens; Duck-winged Cocks with Grey Hens; and, in other instances of success, the position of the sexes reversed. Such must inevitably ensue in cases where "fighting" properties are deemed all important, and have been constantly entertained; still for exhibition, attention to proper matching must always be duly appreciated.

The foregoing report is partly from the *Preston Guardian*, and partly from the notes of our Reporter, who is disabled by a severe family affliction.

We stated in our last that we should have some peculiar circumstances to state relative to this Show; and we now place them before our readers, by publishing the following letter from Mr. Hewitt, one of the Judges:—

"I was waited upon prior to leaving home for Preston, and after every inducement of argument was wasted to prevent my attending the Show, to the honest fulfilment of my previous engagement with that Committee, the question was asked me, What sum I received last year for my services? and the offer at once made, to *pay me that sum, if I would*

not go, 'but leave them on their backs.' With unfeigned indignation I declared my determination was 'to go;' and that I could not be bought by a price equal to their united fortunes, whatever they might be. I went, and as I anticipated, had to fulfil the duties of a second party, *after* my own award-book was fulfilled.

"At the Show, a Mr. ———, of Preston, brought the astounding accusation against me, that I had, by means of 'preconcert,' awarded the prize of the largest Silver Cup to Mr. Wright, of Widnes, undeservedly, and that I visited him; also, that Mr. Wright himself had sent him a message, some six weeks back, stating, 'he might wager any amount up to a £1,000 on the result, for he was to have it.'

"Flesh and blood curdled at such a representation, but I instantly announced 'that I would not leave the room until Mr. Wright had been sent for, and the matter scrutinised before the whole Committee.' It was done. Mr. ——— refusing to reduce his accusation to writing, repeated it verbally, in Mr. Wright's presence. I need scarcely say that a greater injustice or untruth was never perpetrated. It was proved satisfactorily, Mr. Wright 'never before saw, or knew, that Mr. ——— existed; that he never wagered under any circumstances; neither did he ever send any message to any one to do so.' In reply to open query, Mr. Wright also 'assured the Committee, that I never entered his house but once, and that was at the Runcorn Meeting to lunch, some six months since, and that, neither verbally, nor yet in writing, had any allusion whatever to this Cup transpired between us.' The Committee of fourteen persons then passed the following resolution, *nem. con.* (except Mr. ———):—"That this Committee are fully assured, there is neither cause nor reason for the accusation preferred by Mr. ———, and their confidence in the perfect rectitude of Mr. Hewitt's awards remains entirely unshaken." Mr. Wright means to take further steps.

"It is justice to myself to say that Messrs. Brundrit, Dixon, of Bradford, Breavington, of London, Geldard, of Kendal, &c., in short, the company universally, were concurrent in the *fact*, Mr. Wright's three pens far surpassed Mr. ———. I told the Preston Committee, the moment I arrived at the Bull Hotel, of the disgraceful, dishonourable offer made to me to leave them in the lurch; this was the night previous to my awards, and before the above had transpired, so 'they anticipated something.'"

This narrative needs no comment. We hope Mr. Wright will expose and prosecute the party who libelled him; and we hope that Mr. Hewitt's immovable integrity will induce Committees to secure his services at all future Shows of any importance.

NOTTINGHAM CENTRAL POULTRY ASSOCIATION.

In our report of this Show we omitted to state that John Rodbard Rodbard, Esq., Aldwick Court, Langford, near Bristol, took the Silver Cup, value Ten Guineas, for the best collection of poultry, and also the Five Guinea Cup for the best pen of Black Spanish. Mr. George Daft, of Hallowloughton, Southwell, taking the Silver Cup, value Five Guineas, for the second best collection of poultry. We are also informed that Greening's pens will not be employed in future at this Exhibition.

"POINTS" IN AWARDING CUPS FOR COLLECTIONS.

I most particularly wish it to be understood, I am neither a fault finder, a caviller, nor one hard to please; but I think it the duty of all who are interested in the pursuit, or who take pleasure in it, to give their opinions when they think they are for the better management of the Poultry Exhibitions in which they all delight.

Cups for the best collections are now things of every-day occurrence, and till lately, I believe I am correct in stating, the awards have generally been acquiesced in. I prefer that term to the hackneyed one of "gave universal satisfaction." I have never seen the last term so near of attainment as at the late Birmingham Show. There were no complaints. If the absence of pain be pleasure, and the absence

of unhappiness felicity, then the absence of complaint is satisfaction, and exhibitors were satisfied at Birmingham. It is not so always. It is sometimes said the pieces of plate will be awarded by "points." It looks mighty pretty on paper, and those who are suspicious of Judges hug the idea that at last there is a check upon them. They have the "anaglyph." (See "The Caxtons," part vii., chap. 7, page 134.) They are initiated. They are themselves Judges, and will award the Cups. Nothing can be easier:—First prize, four points; second prize, three points; third prize, two points; high commendation, one point; commendation, half a point.

When the Show is opened the awards are placarded. "But who," say the visitors, "have the pieces of plate?" "The Judges," says one of the officials, "have not awarded them." "What do you mean?" says the querist; "not awarded! it is simple addition. My friend has more points than any one, and I should like to see who will keep the Cup from him."

"Well," says the official, "we are in the Judges' hands." "Not at all," pertinaciously replies the other; "any one can award. Look here:—Eleven first prizes, 44; three second prizes, 9; two third prizes, 4; two high commendations, 2; four commendations, 2; total, 61. No one else has as many."

"But, Sir, it is observed your friend has more pens than any one else."

"So much the better for your Show." "The Cup is offered to the best collection." "But the best collection is to be decided by the greatest number of points."

"I think, Sir, these decisions are safe in the hands of the Judges."

"And I think, Sir, the Judges award the prizes, and any one may CALCULATE the Cups."

This ends in a fall out—it cannot end otherwise. If awarded by points, a skilful exhibitor of a number of pens of small value or importance can make success a certainty.

It is useless to state that a competing collection shall consist of not less than a given number of pens, because in most cases the largest exhibitor will be the successful one.

If two exhibitors have equal knowledge of the requisites for success, then he who can send twenty pens will assuredly beat another who can only muster twelve. If points are to form the decision, a pen of Bantams worth 35s., taking the prize over three other pens of inferior value, will count as much as the first prize pen of Dorkings or Spanish worth thirty guineas, and be distinguished over fifty opponents.

Let us see how it will work with two entries.

	VALUE.	No. of entries in class	
1. Dorking	£20	40	
2. Spanish	25	30	
3. Cochin China	12	35	
4. Golden Poland	6	12	
5. Game	5	50	
6. Silver Poland	6	12	
7. Grouse Cochin	10	9	
8. White Cochin	8	9	

Value of 8 competing pens £92 beating 197

Each pen a first prize, 32 points; opposed successfully by (see points):—

	VALUE.	No. of pens,
1. Black Polands, white tops ..	£5 0	3
1. White Dorking	4 0	6
1. Black Cochin	4 0	3
1. Malay	8 0	4
1. White Bantam	3 0	6
1. Black ditto	5 0	8
1. Guinea Fowl	0 10	2
1. Pea ditto	2 0	2
1. Various	4 0	4

Value of Pens £35 10 beating 38

Each pen, first prize, 36 points.

If any one should feel disposed to criticise any of the figures used, let him do so in both lists.

I maintain that, judging by points, the collection of nine pens must have the Cup. I could have added to the numbers of the last by putting Pencilled Hamburgs, Turkeys, and various breeds, all of small value, compared to most of the classes in the first list. I have avoided Ducks and Geese. It is utterly impossible to give satisfaction by any system which will allow the winner in two classes with ten entries to beat the successful in one class of 150 entries. It is, also, manifestly unfair to allow thirty pens to compete with ten by a simple addition of the honours gained by each. One of two things must be done: either the Judges must make the award to the best of their ability, or, if it must be worked according to rule, then not only the prizes taken, but the number of pens exhibited, must be taken into consideration. The new-fangled fashion against which I protest is a mistake. By bare possibility it is applicable to a class, but not to a Show, and if difficulties have existed in awarding pieces of plate, the adoption of these rules would only make "confusion worse confounded."—YORICK.

SOUTH HANTS POULTRY SHOW.

THIS, as we noticed in our last number, took place at Fareham on the 26th and 27th instant. There were about 230 pens of fowls exhibited, and very few bad birds were among them. The numerous high commendations are an evidence, to some extent, of the opinion of the Judge of the excellence of the classes. Too much praise cannot be given to Mr. James, the Secretary, for his care and exertions. The Judge was Mr. Baily, Mount Street, Grosvenor Square, and we did not hear of a single dissent to his decisions.

The following is a list of the awards:—

SPANISH.—First, Mr. Philip P. Cother, Salisbury. Second, Mr. J. R. Rodbard, Langford, Bristol. Highly Commended, Mr. J. Fox, Devizes, Wilts; Mr. G. W. Locke, Newport, Isle of Wight. (Very good class.) *Birds of 1856.*—First, Mr. J. R. Rodbard, Langford, Bristol. Second, Mr. G. W. Locke, Newport, Isle of Wight. Highly Commended, Mr. Philip P. Cother, Salisbury. Commended, Mr. C. Coles, Fareham. (Good class.)

DORKING (Coloured).—First, Mr. A. H. L. Popham, Reading. Second, Mr. H. H. Allen, Liphook, Hants. Highly Commended, Mrs. J. St. John, Oakley, Basingstoke; Mrs. Pettat, Ashe Rectory, Mitcheldever. Commended, Mr. W. Barnard, Fareham; Mr. C. Dorian, Funtindon, Chichester. *Birds of 1856.*—First, Mrs. Pettat, Ashe Rectory, Mitcheldever. Second, Mr. R. James, Wallington, Fareham. Highly Commended, Mr. J. H. Brackenridge, Bristol; Marchioness of Winchester, Andover; Rev. E. K. Lutt, Easton, Winchester; Mr. H. B. Leggatt, Titchfield.

DORKING (White).—First, Mr. Antill, Portsea. Second, Mr. C. James, Fareham. Highly Commended, Mr. C. Dorian, Funtindon. *Birds of 1856.*—First and Second, Capt. Beardmore, Fareham.

COCHIN-CHINA (Coloured).—First, Mr. N. Antill, Portsmouth. *Birds of 1856.*—First, Mr. J. Vaux, Ryde, Isle of Wight. Second, Mr. J. R. Rodbard, Langford, Bristol. Highly Commended, Mr. Kelleway, Ryde, Isle of Wight. Commended, Mr. N. Antill, Portsmouth. Mr. Fielden, Bonchurch, Isle of Wight. (Good class.)

COCHIN-CHINA (White and Black).—First and Second, Mr. A. Peters, Fratton (White). Commended, Rev. H. G. Bailey, Vicarage, Swindon (Black); Mr. N. Antill, Portsmouth (White). *Birds of 1856.*—First, Mr. H. Lowe, junior, Godshill, Isle of Wight (White). Second, Mr. J. R. Rodbard, Bristol (White). Highly Commended, Mr. Peters Fratton (White).

GAME FOWL (Black, Black-breasted Reds, and other Reds).—First, Mr. J. C. Serle, Purbrook. Second, Mr. J. R. Rodbard, Bristol. *Birds of 1856.*—First, Mr. J. J. Fox, Devizes. Second, Mr. J. R. Rodbard, Bristol. Highly Commended, Mr. Locke, Newport, Isle of Wight; Mr. Case, Fareham. Commended, Rev. H. G. Bailey, Swindon.

GAME FOWL (any other colour).—First, Mr. R. James, Wallington, Fareham. Second, Mr. C. James, Fareham. Highly Commended, Mr. J. R. Rodbard, Bristol. *Birds of 1856.*—First, Mr. J. R. Rodbard, Bristol. Second, Mr. Fox, Devizes. Highly Commended, Rev. T. E. Abraham, Ormskirk.

GOLDEN-SPANGLED HAMBURGH.—First, Mr. R. James, Wallington, Fareham. Second, Mr. Cother, Salisbury. Highly Commended, Mr. C. E. Coleridge, Eton. *Birds of 1856.*—First, Mr. R. James, Wallington, Fareham. Second, Mr. Edwards, Lyndhurst.

SILVER-SPANGLED HAMBURGH.—First, Rev. C. J. Down, Chippenham. Second, Mr. Case, Fareham. *Birds of 1856.*—First, Mr. Newick, Ilminster. Second, Mr. J. James, Fareham.

GOLDEN-PENCILLED HAMBURGH.—First, Mr. R. James, Wallington, Fareham. Second, Rev. J. Down. Highly Commended, Mr. T. P. Mew, Cowes, Isle of Wight; Mr. C. James, Fareham. Commended, Mr. Fox, Devizes, Wilts; Mr. Newick, Ilminster. (Very capital class.)

SILVER-PENCILLED HAMBURGH.—First, Mr. Mew, Cowes, Isle of Wight. Second, General Frederick, Winchester. Highly Commended, Mr. C. Dorian, Funtindon. *Birds of 1856.*—First, Mr. Mew, Cowes, Isle of Wight. Second, Mr. R. James, Wallington, Fareham.

POLISH FOWL (Black with White Crests).—First and Second, Mr. T. P. Edwards, Lyndhurst. *Birds of 1856.*—First and Second, Mr. T. P. Edwards, Lyndhurst.

GOLDEN POLISH.—Mr. Fox, Devizes. *Birds of 1856.*—First, Mrs. Pettat, Andover. Second, Mr. Coleridge, Eton.

SILVER POLISH.—First, Mr. Coleridge, Eton. Second, Mr. T. P. Edwards, Lyndhurst. *Birds of 1856.*—First, Mr. Coleridge, Eton. Second, Mrs. Pettat, Andover.

MALAYS.—Second, Miss Lewis, Winchester.

BANTAMS (Gold-laced).—First, Mr. T. P. Mew, Cowes, Isle of Wight. Second, Mr. Fox, Devizes. Highly Commended, Capt. Beardmore, Fareham; Mr. Antill, Portsmouth. (Beautiful class.)

BANTAMS (Silver-laced).—First, Mr. Mew, Cowes, Isle of Wight. Second, Mr. Fox, Devizes.

BANTAMS (any other variety).—First, Mr. Mew, Cowes, Isle of Wight. Second, Capt. Beardmore, Fareham. Highly Commended, Marchioness of Winchester, Andover; Miss Reeve, Fareham; Mr. Dorien, Funtington; Mr. R. James, Wallington, Fareham. Commended, Mr. Nugent, Southsea. (An excellent class.)

FOWLS OF ANY OTHER BREED.—Prize, Mrs. St. John, Basingstoke (Sultans). Prize, Mr. West, jun., Cosham (Andalusian). Highly Commended, General Frederick, Winchester (Silk); Mr. Kelleway, Ryde, Isle of Wight (Turks); Mr. Coles, Fareham (Andalusian); Mr. O. Nicholson, Fareham (Andalusian). Commended, Marchioness of Winchester, Andover (Sultan).

GESE (of any breed).—First, Mr. Edwards, Lyndhurst. Second, Mr. Leggatt, Titchfield.

DUCKS (Aylesbury).—First, Mr. R. James, Wallington, Fareham. Second, Mr. Rodbard, Bristol. Highly Commended, Mr. Edwards, Lyndhurst; Mr. N. Antill, Portsmouth. Commended, Mr. H. Loe, jun., Godshill, Isle of Wight. (Very good class.)

DUCKS (Rouen).—First, Mr. Rodbard, Bristol. Second, Mr. J. Howard, Fareham.

DUCKS (any other variety).—First, Mr. R. James, Wallington, Fareham. (Buenos Ayres.) Second, Mr. R. James, Wallington, Fareham. (White Call.)

TURKEYS.—First and Second, Mr. Rodbard, Bristol. Highly Commended, Mr. J. James, Fareham.

A Piece of PLATE value Five Guineas, was awarded to Mr. Rodbard for the best collection of not less than four pens.

A Piece of PLATE value Two Pounds, awarded to Mr. R. James for the second best ditto.

A Piece of PLATE, the gift of Mr. Coleridge, of Eton College, was awarded to Mr. Coleridge, for the best collection of not less than four pens of Poland fowls, to be shown in four different classes.

GAME FOWLS.

AS THE COTTAGE GARDENER is the acknowledged medium of communication between poultry fanciers, I wish to introduce into its pages the subject of Game fowls, and the rules by which they ought to be judged. I am not sanguine that I shall be able myself to add anything of much importance on this question; but I am not without hope that you, or some of your correspondents, may succeed in giving a more definite form to the rules which ought to guide the decisions of the Judges in the Game classes. At present those decisions, it is well known, are extremely conflicting, and this uncertainty may, perhaps, in some measure, be traced to the want of a more precise definition of the points which ought to belong to all Game fowls, and to the different varieties into which they are subdivided.

All experienced breeders of these fowls are probably agreed that the Game cock should have a fine head, narrow and long, an arched neck, great breadth in the breast, shoulders, and back, the latter narrowing towards the tail; strong limbs, and erect carriage. The Game hen should also possess the same peculiarities of form, and a thin, erect, and perfectly straight comb.

The two points of a fine, narrow head, and a body broad in the shoulders, and tapering towards the tail, are I think indispensable to all first-rate Game fowls; yet we constantly find prizes awarded to birds with heavy, coarse heads, and bodies not marked by the characteristic form I have described. Indeed, I should say that the prevailing tendency of Judges is to give undue weight to size and strength, to the neglect of more essential points.

As a recent instance of this I might refer to the second prize awarded at the Crystal Palace Show, in class twenty-seven, for single cocks. This bird had great size, but was singularly coarse in the head, which alone, in my opinion, is a fatal defect in Game fowls.

I will now venture to offer a few remarks on the Duckwing and Black-breasted Red varieties, as I have had a larger experience of these kinds than any other.

The Duckwing Game cock ought, I think, to have a clear hackle, either white or straw colour; a copper or straw-coloured saddle; a perfectly black breast and tail. A red saddle, a mottled breast, and white feathers in the tail I regard as inadmissible in a first-class specimen.

The Duckwing hen should have a hackle, either white or white striped with black. Back and the wing when closed should exhibit an uniform slaty or bluish grey, with the

delicate partridge pencilling, and the breast a rich, reddish brown, or what the old breeders called a "robin breast."

This description, I think, corresponds with that in *The Poultry Book*; but Mr. Baily, in his little work on poultry, says the Duckwing hen "is a nutmeg colour." No doubt many hens shown as Duckwings are of this colour; but they are far inferior in beauty to hens of the colour I have described. The brown colour so often seen on the wings of Duckwing hens, and the pale colour of the breast, are, in my opinion, considerable defects, and indicating, especially the brown on the wing, an admixture with the Black Red variety.

I think *The Poultry Book* is right in giving the preference to blue and white legs in Duckwing fowls, as legs of this colour best harmonise with the plumage of the hens, and it is difficult, if not impossible, to breed hens of the colour I have described except from the blue and white-legged strains. In the Yellow-legged Duckwings the hens are almost invariably too brown on the wings, and the olive-legged hens are a duller grey than, I think, the Duckwing hen ought to be.

Assuming this statement of points to be correct, there is no difficulty in pointing out defects in some of the Duckwing pens to which prizes were given at the Crystal Palace Show. In class twenty-five the first prize was awarded to a pen of yellow-legged birds. The cock had considerable white in the tail, and dark stripes down the hackle; the hens were too light in the head, and had crooked combs. The second prize pen were olive-legged birds. The cock a little mottled on the breast, and the hens not sufficiently brown on the breast. The birds which obtained the third prize were, I think, the best in the class. The hens approached very nearly to what I contend to be the true Duckwing colour, and in fineness of the head, so important a point in Game fowls, they surpassed all their competitors. But the second prize awarded, in class twenty-six (that for Duckwing chickens of 1856), struck me as most unaccountable. The pullets were a worse match than any in the class, one being a very light grey and almost white on the breast; the other very brown on the wing, and both much too coarse in the head for Game fowls.

In the chicken class for Black-breasted and other Reds, I fancy many amateurs will agree with me, that the first and second prizes ought to have been reversed. The pullets in the second prize pen were, I think, the best in the Show, and the whole pen, to my mind, superior to that which obtained the first prize.

One prominent feature of the classes for Duckwings, and Black-breasted, and other Reds, at the Crystal Palace Show, was the very great preponderance of birds with olive legs, and ten out of every twelve prizes awarded to these classes were given to olive-legged pens. This preponderance may have been accidental, and I should regret if it indicated a settled preference of the olive-legged strains by the majority of the breeders of Game fowls. In the north of England the strains with white, yellow, and blue, or slaty legs are preferred; nor is there much difficulty in giving reasons for this preference, the white legs being a point of considerable importance estimating the culinary value of a fowl. With yellow legs we generally find associated superior brilliancy of plumage, and the blue-legged birds are equally white in the flesh with the white-legged strains; but the olive-legged birds are less pleasing to the eye, and when dressed often present a greenish tinge. Moreover, there is strong probability that the olive legs are not an original colour, but the result of a cross between the yellow and blue-legged strains. I, at least, have always found that the majority of chickens produced by this cross have olive legs, a result which seems to be the natural consequence of a combination of these two colours. But no ingenuity in crossing will produce either white, yellow, or blue legs unless these colours exist in one or both of the birds from which the chickens are bred, or in the stock from which the parent birds are derived. If I am correct in what I have advanced, it would seem that the competing pens, being equal, or nearly so, in the other points, the white, yellow, or blue-legged birds are entitled to be preferred to those with olive legs.

I have permitted this communication to expand to an unreasonable length, and have nothing better to offer in the way of apology than the interest I take in the old English

Game fowl, which, I believe, for beauty, utility, and economy is entitled to the foremost place among our domestic poultry. As I have remarked upon some of the Crystal Palace decisions, I will just add that I was not an exhibitor at that Show.—A NORTH COUNTRY AMATEUR.

LIVERPOOL POULTRY SHOW.

HELD on the 28th, 29th, and 30th of January. Judges:—Rev. Robert Pulleine and Mr. John Baily. The following Prizes were awarded:—

SPANISH.—CUP and First, Mr. H. D. Davies, Spring Grove House, Hounslow West. Second, Mr. J. Tate, Preston. Highly Commended, Mr. J. S. Henry, Woodlands, Crumpsall, near Manchester; Capt. W. W. Hornby, R.N., Knowsley Cottage, Prescott. *Chickens of 1856.*—First, Mr. W. W. Brundrit, Runcorn. Second, Mr. G. Fell, Warrington. Highly Commended, Capt. W. W. Hornby, R.N., Knowsley Cottage, Prescott; Mr. C. Jones, Birkenhead; Mr. D. S. Moore, Teddesley House, Walsall; Mr. A. M. Nicol, Cathcart Street, Birkenhead; Mr. M. Potter, Prestwich, Manchester; Hon. W. W. Vernon, Wolsley Hall, Rugely, Staffordshire. (Excellent class.)

DORKING (Coloured).—First and Second, Rev. S. Donne, Oswestry. Highly Commended, Captain W. W. Hornby, R.N., Knowsley Cottage, Prescott; Mr. W. Wright, West Banks, Widnes, near Warrington; Hon. W. W. Vernon, Wolsley Hall, Rugely, Staffordshire. *Chickens of 1856.*—CUP and First, Captain W. W. Hornby, R.N., Knowsley Cottage, Prescott. Second, Mr. J. Tate, Preston. Highly Commended, Mr. J. Copple, Eccleston, Prescott; Rev. S. Donne, Oswestry; Mr. W. Evans, Hurst House, Prescott; Mr. G. W. Moss, Liverpool; Hon. W. W. Vernon, Wolsley Hall, Rugely, Staffordshire. Commended, Mr. W. Bownass, Royal Hotel, Bowness.

COCHIN-CHINA (Cinnamon and Buff).—CUP and First, Mr. T. Stretch, Marsh Lane, Bootle. Second, Rev. S. Donne, Oswestry. Highly Commended, Mr. W. Copple, Eccleston, Prescott; Mr. C. Punchard, Blunts Hall, Haverhill. Commended, Mr. H. Tomlinson, Balsall Heath Road, Birmingham. *Chickens of 1856.*—First and Second, Mr. T. Stretch, Marsh Lane, Bootle.

COCHIN-CHINA (Brown and Partridge-feathered).—CUP and First, Mr. G. C. Adkins, West House, Edgbaston, Birmingham. Second, Mr. H. Tomlinson, Balsall Heath Road, Birmingham. *Chickens of 1856.*—First, Mr. W. Wright, West Bank, Widnes, near Warrington. Second, Mr. J. Hindson, Barton House, Everton.

COCHIN-CHINA (of any other colours).—First, Mrs. S. R. Herbert, Powick, near Worcester. Second, Mr. R. Chase, Moseley Road, Birmingham. *Chickens of 1856.*—First, Mr. R. Chase, Moseley Road, Birmingham. Second, Mrs. S. R. Herbert, Powick, near Worcester.

BRAHMA POOTRAS.—First, Mr. P. Catterall, jun., Whittingham House, Preston. Second, Mr. R. Teebay, Fulwood, near Preston. *Chickens of 1856.*—First, Mr. R. Teebay, Fulwood, near Preston. Second, Miss Tong, Beckingham Hall, near Gainsbro'

GAME FOWL (White and Piles).—First, Captain W. W. Hornby, R.N., Knowsley Cottage, Prescott. Second, Mr. J. Camm, Farnsfield, Southwell, Notts. *Chickens of 1856.*—First, Mr. J. Camm, Farnsfield, Southwell, Notts. Second, Mr. J. Hartley, Bottoms Mill, Holmfirth, near Huddersfield, Yorkshire.

GAME FOWL (Black-breasted, and other Reds).—First, Mr. J. Hindson, Barton House, Everton. Second, Mr. W. Mellows, Carburton, near Ollerton, Notts. Highly Commended, Mr. G. Robinson, Worksop; Mr. R. Statter, Liscard, Cheshire; Mr. T. West, Eccleston Place; Mr. H. Worrall, Spring Grove, West Derby, near Liverpool. Commended, Mr. E. W. Haslewood, Bridgnorth. *Chickens of 1856.*—CUP and First, Mr. J. Cox, 39, Renshaw Street, Liverpool. Second, Mr. C. R. Titterton, Birmingham. Highly Commended, Mr. T. W. Jones, Portland Cottage, Wellington, Salop; Mr. W. Mellows, Carburton, near Ollerton; Mr. G. Robinson, Worksop. Commended, Captain W. W. Hornby, R.N., Knowsley Cottage, Prescott.

GAME FOWL (Blacks, and Brassy-winged, Greys and Blues).—First, Mr. N. M. de Rothschild, Gunnersbury Park. Second, Mr. H. Worrall, Spring Grove, West Derby, near Liverpool. Highly Commended, Mr. J. Dixon, Bradford. Commended, Mr. E. Wells, Stricklandgate, Kendal. *Chickens of 1856.*—First, Mr. T. W. Jones, Portland Cottage, Wellington, Salop. Second, Mr. J. Wright, Hulland Hall, Ashbourn. Highly Commended, Mr. T. W. Pearce, Bromham Road, Bedford.

GOLDEN-PENCILLED HAMBURGH.—First, Mr. W. C. Worrall, Rice House, Liverpool. Second, Mrs. Parkinson, Knapthorpe, Newark, Notts. *Chickens of 1856.*—First, Mr. G. Botham, Wexham Court, Slough. Second, Mr. W. Bankes, Weston House, Runcorn. Highly Commended, Mr. G. C. Adkins, West House, Edgbaston, Birmingham; Rev. T. L. Fellowes, Beighton Rectory; Mr. W. C. Worrall, Rice House, Liverpool. Commended, Mr. R. Swift, Southwell, Notts. (A good class.)

SILVER-PENCILLED HAMBURGH.—First, Rev. T. L. Fellowes, Beighton Rectory. Second, Mr. J. Dixon, Bradford. *Chickens of 1856.*—First, Mr. E. Archer, Malvern. Second, Mr. G. Botham, Wexham Court, Slough.

GOLDEN-SPANGLED HAMBURGH.—Cup and First, Mr. W. C. Worrall, Rice House, Liverpool. Second, Mr. W. R. Lane, Bristol Road, Birmingham. Highly Commended, Mr. M. H. Broadhead, Stubbin, Holmbridge, Huddersfield. *Chickens of 1856.*—First, Mr. W. Kershaw, Heywood, near Manchester. Second, Mr. W. C. Worrall, Rice House, Liverpool. Highly Commended, Mr. M. H. Broadhead, Stubbin, Holmbridge, Huddersfield. Commended, Mr. A. P. May, Moor Lane, Crosby.

SILVER-SPANGLED HAMBURGH.—First, Mr. J. Dixon, Bradford. *Chickens of 1856.*—First, Mr. R. Teebay, Fulwood, near Preston. Second, Mr. J. Dixon, Bradford. Highly Commended, Mr. G. Botham, Wexham Court, Slough.

POLAND FOWL (Black, with White Crests).—First, Mr. T. Battye,

Brownhill, Upper Mill, Holmbridge, near Huddersfield. Second, Mr. J. F. Greenall, Grappenhall, near Warrington.

POLAND FOWL (Golden).—CUP and First, Mr. C. E. Coleridge, Eton, Windsor. Second, Mr. J. Brundrit, South Bank, Runcorn, Cheshire. Highly Commended, Mr. R. H. Bush, Litfield House, Clifton, near Bristol.

POLAND FOWL (Silver).—First, M. W. Tweed, Epping, Essex. Second, Mr. C. E. Coleridge, Eton, Windsor. Highly Commended, Mr. G. C. Adkins, West House, Edgbaston, near Birmingham; Mr. J. Dixon, Bradford; Mr. G. Fell, Warrington; Mr. J. F. Greenhall, Grappenhall Hall, Warrington.

ANY OTHER DISTINCT BREED.—First, Mr. C. E. Coleridge, Eton, Windsor (White Poland). Second, Rev. T. L. Fellowes, Beighton Rectory (Black Hamburg).

BANTAMS (Golden-laced).—Prize, Mr. W. Wright, West Bank, Widnes, Warrington. Highly Commended, Mr. G. C. Adkins, West House, Edgbaston, near Birmingham. Commended, Mr. G. Crocker, 17, Queen Street, Plymouth; Rev. G. S. Master, Welsh-Hampton Parsonage, Ellesmere, Salop.

BANTAMS (Silver-laced).—Prize, Hon. W. W. Vernon, Wolsley Hall, Rugely, Staffordshire.

BANTAMS (White).—Prize, Mr. D. Ashworth, 6, Thomas Street, Blackledge, Halifax.

BANTAMS (Black).—Prize, Hon. W. W. Vernon, Wolsley Hall, Rugely, Staffordshire.

BANTAMS (any other variety).—Prize, Mr. D. Ashworth, 6, Thomas Street, Blackledge, Halifax. (Black and red breed.)

GESE.—Prize, Mr. W. Kershaw, Heywood, near Manchester. Highly Commended, Mr. J. B. Neilson, Doe Park, Woolton.

DUCKS (Aylesbury).—First, Mr. T. W. Pearce, Bromham Road, Bedford. Second, Mr. J. Dixon, Bradford.

DUCKS (Rouen).—First, Mr. T. W. Pearce, Bromham Road, Bedford. Second, Mr. W. Mather, jun., Finch House, Knotty Ash, near Liverpool. Commended, Mr. J. B. Neilson, Doe Park, Woolton; Mr. H. Worrall, Spring Grove, West Derby, near Liverpool. (A very good class.)

DUCKS (any other variety).—Prize, Lord Berwick, Cronkhill, near Shrewsbury (Brown Call). Highly Commended, Mr. J. Dixon Bradford (Grey Call). Commended, Mr. W. Mather, jun., Finch House, Knotty Ash, near Liverpool (Improved Wild).

TURKEYS.—Prize, Mr. J. B. Neilson, Doe Park, Woolton (American). Highly Commended, Mr. W. Kershaw, Heywood, near Manchester (American); the Earl of Sefton, Croxteth. Commended, Mr. P. Longton, Woolton (Wild American.)

SINGLE COCKS OF ANY AGE.

SPANISH.—CUP, Master McGregor Rake, Brandon Hill, Bristol. Highly Commended, Mr. J. Horrocks, jun., Ribblesdale Place, Preston; Master McGregor Rake, Brandon Hill, Bristol. Commended, Mr. R. Pilkington, Windle Hall, St. Helen's.

DORKING.—CUP, Mr. J. Copple, Eccleston, Prescott. Highly Commended, Mr. W. Evans, Hurst House, near Prescott; Mr. G. W. Moss, Liverpool. Commended, Mr. T. Ullock, Quarry House, Windermere; Captain W. W. Hornby, R.N., Knowsley Cottage, Prescott.

COCHIN CHINA.—CUP, Mr. C. Punchard, Blunts Hall, Haverhill. Highly Commended, Mr. P. Cartwright, Oswestry; Mr. T. Stretch, Marsh Lane, Bootle.

PENCILLED HAMBURGH.—CUP, Mr. W. C. Worrall, Rice House, near Liverpool. Highly Commended, Mr. W. Bankes, Weston House, Runcorn.

SPANGLED HAMBURGH.—CUP, Mr. W. C. Worrall, Rice House, Liverpool. Highly Commended, Mr. E. Turner, Stoneclough, Kersley, near Manchester.

GAME.—£10 CUP, Mr. E. Lowe, Comberford Mill, near Tamworth. £5 CUP, Mr. H. Worrall, Spring Grove, West Derby, near Liverpool. Very highly Commended, Mr. J. Hindson, Barton House, Everton; Mr. W. Mellows, Carburton, near Ollerton, Notts; Mr. N. M. de Rothschild, Gunnersbury Park, Acton. Highly Commended, Mr. W. Allen, 29, Seacombe Street, Liverpool; Mr. W. Cherrington, Stockton, near Shiffnal, Salop; Mr. W. Cox, Brailsford Hall, Derby; Captain W. W. Hornby, R.N., Knowsley Cottage, Prescott; Mr. E. W. Haslewood, Bridgnorth; Mr. G. W. Moss, Liverpool; Mr. C. R. Titterton, Birmingham; Mr. G. Webster, 7, Everton Brow, Liverpool. Commended, Mr. J. Cox, 39, Renshaw Street; Mr. N. N. Dyer, Manor House, Bredon, near Tewkesbury.

OUR LETTER BOX.

NAMES OF FOWLS (C. R.).—From your description we conclude they are Serai Taooks or Sultan's Fowls. If so they come from Turkey.

SWELLING ROUND THE EYES OF FOWLS (Constant Reader).—The swelling round the eye arises from a cold. The treatment is, to keep the fowls affected in a dry, warm situation, and feed them liberally on food slightly more stimulating than usual. Should the disease be unchecked it may run on to purulent roup, which must be regarded as contagious.

DEFORMED EGG (C. G.).—The substance forwarded was simply an egg destitute of shell, the thickened membrane, which somewhat resembled in form an embryo chicken, was the result of irritation. There can be no doubt that such was its true structure, as it was examined microscopically. Should the hen continue to lay these eggs, the treatment would be to give her one grain of calomel, and one twelfth of a grain of tartar emetic, with low and spare diet for a few days.—W. B. TEGETMEIER.

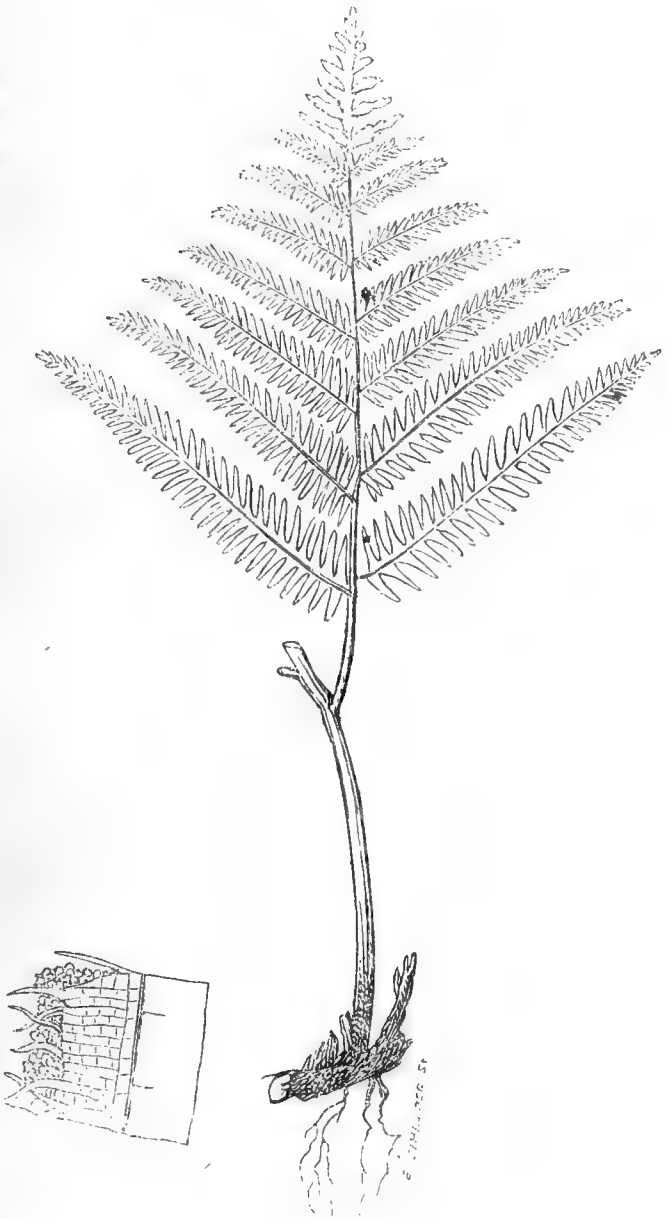
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WEEKLY CALENDAR

D M	D W	FEBRUARY 10—16, 1857.	WEATHER NEAR LONDON IN 1856.				Sun Rises.	Sun Sets.	Moon R. & S.	Moons Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
10	TU	QUEEN VICTORIA M. 1840.	29.962—29.923	54—41	S.	—	26 a. 7	4 a. 5	6 56	16	14 31	41
11	W	Pilewort (<i>Ranunculus</i>).	29.851—29.810	53—42	S.W.	20	24	6	8 8	17	14 31	42
12	TH	Henbit (<i>Lamium</i>).	29.737—29.375	50—43	S.W.	05	22	7	9 20	18	14 30	43
13	F	Yew (<i>Taxus baccata</i>).	29.773—29.685	53—43	S.	20	20	9	10 31	19	14 29	44
14	S	Valentine.	29.739—29.709	54—40	S.W.	02	18	11	11 43	20	14 27	45
15	SUN	SEXAGESIMA SUNDAY.	29.773—29.726	55—32	S.W.	—	16	13	morn.	21	14 24	46
16	M	Coltsfoot (<i>Tussilago</i>).	29.841—29.765	54—32	E.	—	14	15	0 56	22	14 20	47

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 44.9°, and 30.2°, respectively. The greatest heat, 65°, occurred on the 10th, in 1831; and the lowest cold, 3°, on the 11th, in 1845. During the period 128 days were fine, and on 68 rain fell.

PTERIS AQUILINA.



WITH but two exceptions all modern botanists have described this very common Fern under the above names. Mr. Newman alone has called it *Eupteris*, and Mr. Bernhardt considers it an *Asplenium*, but both still retaining the specific name *aquilina*. This specific name was given by Linnæus because, when a slanting cut is made through the body of the main root, the surfaces represent in their woody tissue a figure somewhat resembling a spread or displayed eagle. In English it has been called *Brakes*, *Female Fern*, *Braken*, *Eagle Fern*.

Root creeping, widely extending, brown and downy when young, smooth and black when old. Rootlets

fibrous and downy. *Fronde* produced singly along the root, upright, and from one to eight feet high. In one instance it was found thirteen feet high. *Stem* half its length without branches, angular, pale yellowish green, but purplish at the lower part, stiff, branched. *Branches* horizontal, spreading, with smooth stalks, the primary branches nearly alternate, and the next more decidedly alternate, the leafy portion deeply cut into close, spear-head-shaped, bluntish, convex, opposite segments, the end one usually much the largest, all smooth, and of a light, bright green colour on the upper surface, but paler and hairy underneath; edges of the segments brownish, rolled back, and wavy, inclosing the fructification. There is a mid-vein in each segment, and this mid-vein produces side-veins in opposite pairs, which are variously branched; these branches unite at the edge of the segment, and where they unite is the *fructification*. This is in a continued line, the masses of spores being covered with a whitish membrane, which seems to be an extension of the outer skin of the leafy segment.

This Fern is variously modified by the situation in which it grows; its segments are sometimes quite entire-edged, and this variation has been called *integerrima*. In another variation the edges of the segments are excessively curled or crisped. This, however, differs from the *Pteris crispa* of some botanists, which we have described as *Allosorus crispus*.

It is useless to particularise the localities of this Fern, for it is found on barren heaths and in woods wherever the soil is a silicious sand. It is much rarer in districts where chalk abounds.

Turner, writing of this Fern in 1562, says in the second part of his "*Herbal*,"—"Not onely the opinion of the comen people is that the Ferne hath sede, but also it is the opinion of a Christen Physicion, named Hieronymus Tragus, who doth not onely saye that Ferns hath sede, but wrytith that he founde upon mydsomer even sede upon *Brakes*. I have taken oute of his herball his wordes concernynge that matter, and have translated that into Englishe after this maner followinge. Although that all they that have written of herbes have affyrmed and holden that the *Brake* hath nether sede nor frute, yet have I dyvers tymes proved the contrarye, whiche thinge I will here testefye. I have foure yeres together, one after an other, upon the vigill of Saynt Johne the Baptiste (which we call in Englishe mydsomer even), soughte for this seede of *Brakes* upon the nyghte, and in dede I fownde it earlye in the mornynge

before the daye brake; the sede was small, blacke, and lyke unto Poppye. I gathered it after this maner: I laide shetes and wollen leaves underneath the *Brakes*, which receyved the sede that was by shakynge and beatynge broughte oute of the branches and leaves. Manye *Brakes* in some places had no sede at all, but in other places agayne a man shall fynde sede in every Brake. I went aboute this busyness all figures, conjurynges, saunters, charmes, wytecraftes, and sorseryes sett a syde, taking with me two or three honest men to bere me companye. When I soughte this sede all the villagers aboute did shyve with bousyers, that the people made there."

We have more fully narrated the old superstitions relative to "Fern seed" in Vol. XVI., pp. 324, 325, and we will now turn to more profitable matter—the uses to which *Brakes* are applied. These are well epitomised by Mr. Lightfoot as follows:—

"The root is viscid, nauseous, and bitterish, and, like all the rest of the Fern tribe, has a salt mucilaginous taste. It creeps under the ground in some rich soils to the depth of five or six feet, and is very difficult to be destroyed. Frequent mowing in pasture grounds, plentiful dunging in arable lands, but, above all, pouring urine upon it, are the most approved methods of killing it. It has, however, many good qualities to counterbalance the few bad ones. Fern cut while green, and left to rot upon the ground, is a good improver of land; for its ashes, if burnt, will yield double the quantity of salt that most other vegetables will.

"Fern is also an excellent manure for Potatoes; for, if buried beneath their roots, it never fails to produce a good crop.

"Its use as a good litter in the stable and the fold is known to every farmer; as, also, that it makes a brisk fire, when dried, for the purposes of brewing and baking.

"Its astringency is so great that it is used in many places abroad in dressing and preparing kid and chamois leather.

"In several places in the North the inhabitants mow it green, and, burning it to ashes, make those ashes up into balls with a little water, which they dry in the sun, and make use of them to wash their linen with instead of soap.

"In many of the Western Isles the people gain a very considerable profit from the sale of the ashes to soap and glass makers.

"In *Glen Elg*, in *Inverness-shire*, and other places, we observed that the people thatched their houses with the stalks of this Fern, and fastened them down with ropes made either of Birch bark or heath. Sometimes they used the whole plant for the same purpose, but that does not make so durable a covering.

"Swine are fond of the roots, especially if boiled in their wash.

"In some parts of *Normandy* we read that the poor have been reduced to the miserable necessity of mixing them with their bread; and in *Siberia* and some other Northern countries the inhabitants brew them in their ale, mixing one-third of the roots to two-thirds of malt.

"The ancients used the root of this Fern, and the whole plant, in decoctions and diet-drinks, in chronic disorders of all kinds, arising from obstructions of the viscera and the spleen. Some of the moderns have given it a high character in the same intentions; but it is rarely used in the present practice. The country people, however, still continue to retain some of its ancient uses, for they give the powder of it to destroy worms, and look upon a bed of the green plant as a sovereign cure for the rickets in children."

The ancients were correct in their estimate of the fattening qualities of the Brake, and it has been proved in modern days. At Nettlecombe, in Somersetshire, it is, or was, customary to gather the young shoots of this Fern, and to simmer them for two hours in water.

When cold the liquor forms a strong jelly, and is as effectual as Potatoes for pig food.

Professor Sprengel recommends all Ferns, and especially the Brake, as a good manure. He says that 10,000 parts of the fresh-gathered, air-dried herbage contain of mineral substances 1,040 parts silica, 433 lime, 152 magnesia, 1,050 potash, 370 soda, 052 alumina, 150 oxide of iron, 036 oxide of manganese, 095 sulphuric acid, 060 phosphoric acid, 258 chlorine = 3,696 of mineral substances. This Fern, he adds, is rendered still more valuable as a manure by its richness in nitrogen. He found that 100 lbs. of its dry herbage contain 16-100ths of a pound of nitrogen, and, consequently, 3000 lbs. = 45 lbs.

If cultivated, it must be grown in a deep, sandy soil, and in the shade, or the specimens will not be fine. It should be covered over with leaf mould every winter, for the roots are very liable to suffer from severe frost. To protect them further, and, indeed, for ornament, let the dead fronds remain until the spring. To propagate it, take up the creeping main root early in spring; have the ground trenched ready, draw drills about two inches deep, lay the roots along the drills thickly, and cover them with the soil.

A MEETING of the BRITISH POMOLOGICAL SOCIETY was held at the rooms, 20, Bedford Street, Covent Garden, on Thursday, the 5th inst., Robert Hogg, Esq., in the chair.

A communication was read from Mr. Powell, of the Royal Gardens, Frogmore, on the Pear *Bonne de Malines*, exhibited, in conjunction with Nelis d'Hiver, at the former Meeting of the Society, and which has always been considered synonymous with Nelis d'Hiver. Mr. Powell stated that the *Bonne de Malines* grown in the Royal Gardens was received from Lord Waterpark, but he had also seen the same variety at Arundel Castle and other places. This season it is much later than the Nelis d'Hiver, but it generally ripens before that variety in October. Mr. Rivers stated that he also grows a variety under the same name, which he received from the late Major Esperen, of Malines, and which is entirely different from either the variety grown in the Royal Gardens or the Nelis d'Hiver, as it ripens very late in the spring, and more generally never ripens at all.

Messrs. Webber and Co., of Covent Garden, exhibited a basket of *Black Hamburgh Grapes* in very fine condition, grown in the garden of the Marquis of Hastings, in Norfolk. They were highly commended by the Meeting as remarkable specimens at this season of the year.

Two specimens of Apples from Mr. W. Cox, of Madresfield Court, were exhibited, one of which was stated to be an excellent cider and culinary Apple, which keeps till late in the season. It is called the *Rick Apple*; but the Meeting was of opinion that it possessed no features which were at all recommendable. The other, a variety which Mr. Cox received from Paris some years ago, is a large, handsome, and firm Apple, which, he says, will

keep till June or July. It appeared to be a variety known as *Reinette St. Sauveur*.

The following Members were elected:—

J. R. NEARNE, Esq., Rushett, Sittingbourne.

Mr. JAMES FRASER, Lea Bridge Road.

THOSE of our readers who have a love for the marvellous may have their predilections gratified at an establishment now in London, where it is professed to sell plants which produce Pears "*d'un goût exquis*," each weighing 5 lbs.; Peaches weighing 2 lbs., and many other things equally wonderful. We were told by several who had seen it that such a place existed, and we therefore paid it a visit. In the window we saw our old friend *Uvedale's St. Germain*, of very respectable size, but not nearly so large as we have seen it grown in this country. Here it was figuring under the name of "*Belle Inexagore*," and we were assured it was an excellent table Pear—of course it is *when stewed*. We were asked 6s. each for the plants, but we did not give it. There was also the *Catillac*, preserving a respectable incog. as *Beurré Nantais*; but the gentleman who attended upon us could not furnish the names of any of the other specimens, which we could have told him were composed of the two already named, varying only in size. Ushered upstairs, we saw a perfect gallery of coloured drawings of the most extraordinary fruits we ever beheld. We made a note of a few. *Raspberries*, white and red, the size of a Golden Pippin! and called "*Enorme de Maroc*." *Currants* with bunches the size of those of the Chasselas Grape, and berries larger than those of the Hamburg! *Cherries* produced in bunches like Grapes, and fruit larger than any Grape we ever saw! *Gooseberries* the size of Apples, and *Strawberries* larger than a hen's egg. Sweet *Horse Chestnuts* called "*Maron Tyrolienne*," and "*Celestial*" *Grapes* equaling in size large Walnuts. Among the plants there were representations of *Roses* which were yellow in the outside petals, and blue in the centre! *Hyacinths* dark blue in the outside, and a star of crimson in the centre! *Scarlet* *Glycine Sinensis*, and a plant of *Magnolia grandiflora*, which we were assured produced white flowers marked with red stripes! We did not buy anything, because some years ago, when we had less experience than we have now, we visited a similar establishment, and were induced, by the representation of a coloured drawing and the assurance of the vendor, to purchase a *Scarlet* *Agapanthus*, for which we gave five shillings, but which, when it flowered, proved to be our old friend, *Agapanthus umbellatus*, with his own blue flower. Need we run the risk of being within the law of libel by saying, without reservation, what these vendors of prodigies are?

MEETING OF THE HORTICULTURAL SOCIETY.—FEBRUARY 3RD.

A BITTERLY cold day, with hard frost and north-east wind, after a week of the hardest weather we have experienced this winter, prevented people from sending

up many flowers to this Meeting; but the host of new Members and their friends, if only for the novelty of the thing, mustered in great force, but not, as great people generally do, up to time. More than one half of the new people entered the room after the chair was taken, at two o'clock, and, of course, disturbed the other half. Parliament met the same day, but it would be useless to ask them to pass a law for "*being up to time*" anywhere; but if the country party is to be thus disturbed you may depend upon it they will leave us altogether, and call us by odd names into the bargain.

The Rev. Vernon Harcourt was in the chair, and he gave us very decided assurance that the "*resurrection*" of the Horticultural Society was now beyond a doubt, and expressed a hope that the Horticultural Phoenix would not only rise from the ashes, but spread its wings farther than ever. All very good if the bird takes to the right "*airt*," and the ashes are screened so as to leave no *hot cinders* to singe the feathers.

The Reverend gentleman put it next to the Meeting whether it would not save a deal of bother to ballot batches of new members all in a "*lump*," and some of us thought, just then, that he was going to put the blame of all the failures of the Society on those who balloted; but the truth came out at last. Our ballot-box is constructed on a wrong principle, and so let in the wrong people all this time, "*without the slightest intention on the part of those who balloted*;" and then, with the hearty assent of the whole Meeting, twenty-five new Members, or Fellows, were elected in one throw from the chair, and the lecture began under very favourable circumstances, beginning with the magnificent *Grapes* from Trentham, which were said to be not only a particular credit to the Society, but most creditable to British gardening. These were so placed that all the bunches in a line stood with their *lower ends* to the spectators, the best way of "*showing off*" particularly fine bunches. There was one bunch of the *Barbarossa* in the centre of the line, with three bunches of *Muscat of Alexandria* on one side of it, and three bunches of the true *Tokay* on the other side—all in perfection for table.

The next were also *Muscats*, a basket of 15 lbs., from the celebrated Vineries at Keele Hall, Staffordshire; and Mr. Ingram, of the Royal Gardens, Windsor, sent a basket of most beautiful *Black St. Peter's* Grapes, which were described to the Meeting as "*new Grapes*."

There was only one collection of home-grown fruit, and that from Mr. Tillyard, gardener to the Right Hon. the Speaker. It consisted of one *Queen Pine* for the top dish, three bunches of fine *Black Hamburgs* for a bottom dish, and six dishes of *Pears* to match thus:—A dish of the finest specimens of the *Winter Nelis* Pear that were ever exhibited to match another of *Knight's Monarch*, a small round Pear; *Glout Morceau* and *Beurré Rance* the next match; *Ne Plus Meuris* and *Easter Beurré* making the third pair as they would be set on the dinner table.

The exhibition of fruit "*in collections*" is now carried to such a pitch that one could transfer a collection from the exhibition table to that for the "*company to dinner*" without an odd dish, or any difficulty in matching the pairs of dishes as above; and young gardeners ought to pay particular attention to that, both at home for parties and when they exhibit for competition, for that is one of the grand secrets which old gardeners take advantage of for carrying the prizes. Judges are picked out from the best gardeners, and the more aged exhibitors make great objections now-a-days to young men being placed "*on the woolsack*," no matter how clever they may be. Most of our great gardeners dish their own fruit, or rather, have it dished and set on the dining or dessert table, or partly on both, under their own immediate inspection; therefore, when

judging fruit, the "ruling passion" for tops and bottoms, corners, centres, and matching, carries them a long way.

Of *Pines* one specimen from Her Majesty was the most perfect fruit most of us had ever seen. It was the royal winter favourite, the *Smooth-leaved Cayenne*. It weighed 6lbs. 12ozs., and had a very small crown. Another very beautiful Pine, weighing 6lbs. 10ozs., came from Mr. Jones, gardener to the Dowlais Iron Company. It was the *Black Prince*, and is said to be a most excellent kind, and very little known yet, except among a few of our best gardeners. Another 4lb. Pine, called the *Trinidad*; but it was not the true old "Trinidad" of twenty years since, though a very good-looking Pine. It came from Mr. Williams, gardener to A. Fairre, Esq., Aigburth, near Liverpool; and there was a long specimen of the *Black Prince* Pine from Mr. South, gardener to A. H. Davenport, Esq., Capesthorn, near Congleton, Cheshire. This had a second prize.

The very finest specimen we ever saw of the bunch of fruit of *Musa Cavendishii*, the Banana or Plantain, was exhibited by Mr. Young, gardener to W. Stowe, Esq., Dulwich. It weighed 16lbs., and every fruit on the bunch was perfectly ripe for table, a very unusual thing with Bananas.

There was a collection of splendid *French Pears and Apples*, and some excellent vegetables and salads, from Mr. Solomons, of Covent Garden.

The next subject referred to was said to be the most important plant that had been introduced for many years. This plant was removed up to the chair, and was described as a true *double Camellia reticulata*, which Mr. Fortune sent from the north of China to Mr. Standish. When Mr. Fortune spoke of this *Camellia* some years since doubts were entertained about the existence of such a plant; but here it was, and no one could mistake the leaves and buds, which are different from those of all other kinds of *Camellias*; and Mr. Fortune was in the room, looking better than ever he did, and had the satisfaction to hear his account verified to the letter. We have the true *double reticulata Camellia* at last, in colour more in the way of *corallina* than the old one; but the plant being very small the flower was not so large as that of the original. However, there is no reason to doubt but a large plant will produce a corresponding size in the flowers.

The next subject for remark was a fine specimen plant of *Erica mutabilis*, sent by Mr. Roser, gardener to J. Bradbury, Esq., Bedford House, Streatham. This plant "took four men to carry upstairs," and was beautifully in bloom.

A collection of *cut flowers* from Mr. Williams, gardener to A. Fairre, Esq., Aigburth, Liverpool, was next adverted to. This consisted of a fine specimen of *Lælia superbiens*, an excellent deep purple-eyed variety of *Calanthe vestita*, an Indian ground Orchid; a good bunch of *Cælogyne cristata*, a fine white-flowering Orchid; *Azalea amœna*, the "hose in hose" kind, and in higher colour than later in the season; *Labichea diversifolia*, a greenhouse, yellow-flowered kind from Australia; *Diosma ericoides*, with starry white flowers like an *Eriostemon*. This is the *Bucku* or "smell divine" plant of the Hot-tentots, who relish its powerful, offensive odour as much as we do our scented oils and pigments. A good spike of *Gesnera zebrina*, and several other kinds, all of which were very carefully packed, and looked as fresh as when they were cut.

Another plant that was much spoken of is *Cupressus Macnabiana*, alias *glandulosa*, and the country party were told to be on their guard against the last name, which is also applied by some to *Cupressus Goveniana*, an old and very different kind; but no one will mistake *Cupressus Macnabiana* after once seeing it, on account of the habit, which is very stiff, and yet of slender growth, and is particularly glaucous. This was from the garden

of the Society, together with several other kinds of rare Conifers, as *Thuiopsis borealis* and *plicata*, two distinct kinds, which look much like *Thuja plicata* or *Warreana*; *Cupressus Sinensis*, a fine-looking kind, with a strong habit and light green aspect, inclining to glaucous; *Cupressus elegans*, from Sikkim, which has a touch of *funeris*, or between that and *torulosa* about it; *Cupressus sempervirens Indica*, apparently a more slender kind than the European form of it; *Cupressus torulosa nana*, another dwarf, which, if it keeps so, will be a favourite with many, as all the race are most suitable for the greatest number of gardens—those of no great extent; *Taxodium Mexicana*, in the way of *sempervirens*; *Pinus Roylei*, with the aspect of *P. inops*; *Pinus Jeffreyana*, which looks, "to all intents and purposes," like a young *ponderosa*! Surely the modern Athenians have not made such a botanical slip as that; but it is most difficult to distinguish these things in the young state, and I may be wrong; but I once bought a *ponderosa* and two *Abies Douglasii* for half a crown each when the latter were selling at five guineas in the same nursery. That was in 1831, and one of the said *Douglasii* is now the third, if not the second, highest tree of the kind in England, while *ponderosa* is only a gouty, heavy-looking, stupid tree of no symmetry or any kind of beauty. *Pinus abschasicæ*, which looks like a very slender form of some variety of *Pinaster*; *Pinus osteosperma*, a good-looking kind, half way between *cembra* and *maritima*; *Retinispora ericoides*, alias *Juniperus ericoides*, and a small seedling of *Chamaecyparis thurifera*, alias *Cupressus thurifera* and *Juniperus thurifera*, and the white Cedar of Mexico, where it makes a large, lofty tree; *Araucaria Ridolfiana*, with much the aspect of *A. Braziliensis*, but this is said, by the Marquis di Ridolfi, to be much more hardy than the common *A. Braziliensis*. On that account it must be the more valuable in this country, and from what one reads of "Travels in Brazil," there ought to be many more hardy kinds of this tree than the old one.

There was also a collection of six kinds of *Epacris*: *onosmaeflora*, all white; *impressa alba*, blush white; *densiflora*, ditto; *delicata*, much the same; and so with *Attleana*. A *Correa* and an *Acacia lophantha*, together with a dozen of very good kinds of *Primula Sinensis*, more particularly the white and lavender kinds, and a plant of *Eugenia Ugni*, to show the right way of pruning it, which some good gardeners do not yet understand. It is this—all the strong leading shoots are cut to one half or two-thirds of their length, and all the very small ones are cut away quite close, so as to see no more of them, in order not to crowd the head like that of a "specimen" plant, but to keep it open freely for the sun and air to reach the fruit, which is best from the moderately strong shoots which are not touched till the fruit is gathered, when they may be cut away if they are not required to "fill up."

There was a box of cut *Camellia flowers* from Mr. Ingram, gardener to J. J. Blandy, Esq.; also very good *Sea-kale*, *Mushrooms*, and *Rhubarb*; and Mr. Tegg, gardener to A. Prior, Esq., Roehampton, sent a dish of the best-looking sample of *early Potatoes* we ever had at a February Meeting, and a dish of our true English-grown *Asparagus*. The Potatoes were the *Walnut-leaved Kidney*. Mr. Judd sent from Althorp six plants of *Brussels Sprouts*, taken "promiscuously" from what the "kitchen boy" left after cutting away at them for the last three months. They were accompanied by a letter to say that he saved all his own seed of it for the last sixteen years, and that his father first put him "up" to the way, after proving it a much longer time than sixteen years; therefore, that the old prejudice in favour of the foreign seed is "a fudge," as he hoped the specimens he had sent would prove to the Meeting. They were certainly six good specimen plants, all but

the roots, which he did not send, and, like the fruit of the *Musa*, every "head" on all the six was up to the mark, or best market-garden style.

Mr. Cutbush, of Highgate, sent a beautiful collection of early *Hyacinths*, to which special reference was made, and the good advice to take down the names was freely taken after the lecture was over; so freely, indeed, that I could not get near them to point them out to a lady who was most anxious to see them, but I booked the names before the Meeting. *Prince Albert* is black as ebony; *Lawrence Coster*, next tint, a dark purplish blue; *Baron Von Thuyll*, next blue tint; *Charles Dickens*, a lilac bluish; *Orondates*, large light blush blue; *Prince Frederick*, a large double light blue; *Hannah More*, a fine pure white, single, and very large; *Prince of Waterloo*, double blush white; *Tour d'Auvergne*, a fine double white; *Waterloo*, always the best early double scarlet; and *Duke of Wellington*, a single peach blossom, very gay. A call at Highgate, where these *Hyacinths* are in full bloom without much forcing, would pay one for years to come. There is nothing, after all, to trust to like one's own eye.

There was a large piece of the root of *Aralia papyrifera*, which Mr. Fortune brought over to show how the Chinese make their rice paper from it; but why they call it rice paper is best known to themselves. The pithy part of the root is so thinly sliced by the Chinese as to resemble paper, which they make into ornaments, and which they sell much cheaper than our cheapest paper. There was also a plank of *Beech* to show how the soft and inferior woods may be impregnated with a solution to render them as durable as the best Oak. Some fine drawings of new Orchids, from Mr. Linden, were on the table. D. BEATON.

HEAD GARDENER AT CHISWICK.—Mr. G. McEwen, formerly gardener to the Duke of Norfolk at Arundel Castle, has been appointed head gardener at the Chiswick Garden by the Committee of the Horticultural Society. He will enter upon his duties about the 20th instant, and he is a man well calculated to keep people in their proper places. His salary, we hear, is to be £250 a year; so we were right in our protest against the smaller salary proposed.

PLANTS THAT MAY BE IN BLOOM IN NOVEMBER.

GREENHOUSE PLANTS.

ANDERSONIA *Sprengelioides*; *Ageratum Mexicanum*; *Bertholinia pectinata*; *Cassia corymbosa*; *Camellias* towards the end of the month; *Chimonanthus fragrans* and *Sinense*; *Chrysanthemum Sinense*, all the sections and varieties in full perfection; *Cinerarias*; *Citriobatus multiflorus*; *Correa*, of the *speciosa* and *pulchella* varieties; *Coronilla glauca*; *Cytisus Attleana*; *Daphne Indica* and *Indica rubra*; *Echeveria Scheerii*; *Epacris nivalis*, *impressa*, &c.; *Erica distans*, *pilularis*, *Caffra*, *gracilis*, *autumnalis*, *hyemalis*, *Linnæoides*; *Fuchsia serratifolia*; *Globulea hispida*; *Habrothamnus elegans*; *Hermannia plicata*; *Jasminum nudiflorum*; *Lambertia rosea*; *Leonotis leonurus*; *Leucocoryne ixioides*; *Linum tigrinum*; *Mignonette*; *Mesembryanthemum bifidum*, *curvifolium*, *octophyllum*, and *roseum*; *Myrsine coriacea*; *Myoporum parvifolium*; *Nerine Sarniensis*; *Oxalis asinina*, *laxula*, *repatrix*, *variabilis*, *Simsii*, and *fruticosa*; *Primula Sinensis*; *Phyllica pinea*; *Roses*, *Chinese*, &c.; *Salvia splendens* and *fulgens*; *Tropæolum Lobbianum* and *Triomphe de Gand*; *Violets*, *Russian*, *Tree*, and *Neapolitan*; *Witsenia corymbosa* and *Maura*. *Tree Perpetual Carnations* will likewise be fine if the temperature at night averages 45°.

STOVE PLANTS.

Achimenes picta; *Ægiphila grandiflora*; *Agalmyla staminea*; *Ardisia acuminata*; *Balsamina Jerdoniæ*; *Begonia Fuchsioides*, *parvifolia*, *albo-coccinea*, and *manicata*; *Canna coccinea*, *carnea*, and *latifolia*; *Centradenia floribunda*; *Crinum undulatum*; *Columnea scandens*; *Dendrobium speciosum*; *Eranthemum verucosum* and *albiflorum*; *Euphorbia splendens* and *Jacquiniiflora*; *Geissomeria aurantiaca*; *Gomphocarpus arborescens*; *Gesnera zebrina* and *splendens*; *Hibiscus Lindleyi* and *mutabilis*; *Justicia flavicoma* or *calytricha*; *Lysionotus longiflorus*; *Manettia bicolor* and *uniflora*; *Nematanthus longipes*; *Neottia orchioides* and *pudica*; *Olax imbricata* and *scandens*; *Oldenlandia Deppiana*; *Pancratium Guianense*; *Passiflora princeps* and *alata*; *Pentadesma butyracea*; *Poinsettia pulcherrima* and *pulcherrima alba*; *Ruellia formosa*; *Rogiera amœna*; *Siphocampylos macostemma*; *Solandra lævis*; *Stigmaphyllon heterophyllum*; *Tillandsia aloifolia*, *bulbosa*, and *bulbosa picta*; *Torenia Asiatica*; *Tradescantia discolor*; *Vriesia glaucophylla*; *Whitfieldia lateritia*; *Zygopetalum crinitum*, *tricolor*, and *Mackayii*.

CYTISUS ATTLEANA is a little gem of a bush, and a mass of yellow in winter and spring, where the temperature is seldom under 45°. It will keep much cooler merely if free from frost; but then it will not bloom until spring. It generally grows as much to width as height, so that an oldish plant may be fifteen inches across, and as much in height, in a twelve-inch pot. For compactness this is the best of the *Cytisus* and the *Genista* group. The London nurserymen propagate it easily enough; but I cannot say I have been equally successful, as with me many of the young plants went off after being potted. It grows best in peat and loam, with a little silver sand mixed with it. It requires good drainage and plenty of water when blooming and growing. After June it will stand very well in a sheltered place out of doors, and should then be frequently well syringed with soap-water, and then next day with clean water, to keep down all trace of the red spider.

CAMELLIAS.—Beautiful at all times, these are most interesting in the country in the months of November, December, and January; but at the blooming period few plants like much forcing worse than the *Camellia*. I have seen fine flowers out of doors protected by a mat against a wall; but then, though the plant suffered little, the flowers were damaged by rains and severe frosts. The time to force the plant is a week or two after the flowers are all gone. The growth is thus quickly made, the flower-buds are early formed at the points of the young shoots, and then the plants may be gradually hardened off, and receive a comparative rest before it is time to remove them into the house, the buds swelling gradually all the time. The heat of a Vinery or Peach-house is very good for starting the plants after blooming. Keeping the greenhouse rather close, and a little shaded at one end, is the next best position. When common greenhouse treatment is merely given, and the plants are placed out of doors after the end of June or the beginning of July, the flowers will seldom open until after the next year, and on to March and April.

AZALEAS are best treated in the same way when early blooming is desired.

Many Hybrid RHODODENDRONS so treated will bloom in the winter months without any forcing into bloom.

CARNATIONS of the *Tree* or *Perpetual* varieties will now also render a small house very gay. They are best obtained thus:—Have cuttings struck and potted off by October. Place these small pots in a cold frame or pit for the winter. Water only when very dry. Dig a well-exposed border fine in the beginning of April, add some light loam and well-rotted dung, turn it over with

a fork several times, and then turn the plants carefully out about fifteen or eighteen inches apart. In a fortnight slip out the terminal bud, so as to cause a free protrusion of side-shoots. As the plants grow, stake them, water when necessary, and clean and surface stir the ground. By the middle of September lift the plants carefully into eight and twelve-inch pots, placed close beside them so as to preserve the ball. Use rich, loamy soil, water, and set for a few days in the shade, and by the end of October place them under cover, as the buds will be swelling and opening in abundance.

CORONILLA treat as the *Cytisus*. The management of *Chrysanthemums*, *Epacris*, and *Heaths* has been given frequently of late.

MIGNONETTE TREE.—The best for this purpose is the giant sort sent out by the Messrs. Henderson, though the common sort will do well enough. It seems to thrive better in winter grown to a single stem than in pots in the usual way. The height of the stem must be regulated by your own taste. Little standards, eighteen inches high, with a bushy head, as much or considerably more in diameter, look very nice; and one such plant covered with bloom will perfume a whole house. We had nice plants, some of them double that height, this autumn, with fine-formed heads. Some of these all at once, to our great annoyance, had their leaves turned brown, and some of these became yellow. Even in their case fresh leaves and flowers were thrown out, but not so fine as before. Rightly or wrongly we attributed the change to syringing them with clear water, holding quicklime in solution. We have some pretty specimens now; but before this drawback we were inclined to be proud of our standard Mignonette. I should not, with propriety, write *we*, as they were entirely under the management of one of my young men, and their appearance spoke highly of skill and careful culture. He sowed a few seeds in the smallest 60-sized pots about the middle of March. These were placed in a Cucumber frame. When well up they were thinned gradually until only one plant was left. As soon as the little pot was filled, not matted, with roots, the ball was turned into a pot a size larger, and plunged into a gentle bottom-heat. As soon as the plants were a few inches in height a twig was placed against the leading shoot to keep it upright and encourage it to grow. Every side-shoot as it appeared had its point nipped out near to the main stem. This secured leaves along the stem, and thus added to its strength more than if the side-shoots had been taken off close at first. A similar course was proceeded with until the plants were as high as desirable, and stood in eight and twelve-inch pots, save that, as the days lengthened and got warm, a cold pit, kept close at first, and more open and airy afterwards, supplied the place of the sweet hotbed in which the plants were at first started and grown. When the stem had gained the desired height—from eighteen inches to three feet—the point was picked out, and when the buds in the axils of the leaves broke near the point, from three to four, and even more shoots were chosen to form the main branches of the head. The soil used was chiefly pure loam, lightened with a little peat, and enriched with well-aired old cowdung. When at their height a neat, stout stake supported each plant. A few small holes through the stake, with small wires through them, made a slight wire-wheel framework for supporting the head. Every flower-bud was nipped out as it appeared until towards the end of autumn. The head was well furnished with shoots. Others were trained in the conical pyramidal shape, and I rather liked them, as well as these standards.

I saw some beautiful tree standard Mignonette plants last May in the Experimental Gardens at Edinburgh. It is rather a common thing to give prizes at country exhibitions for the best pots of Mignonette. It would be a step in the right direction to make it necessary that

only one plant should be grown in a pot, instead of a thicket as at present. At an exhibition there is no reason why a Mignonette-pot should have a number of plants, whilst such a thing would not be tolerated in the case of a *Cineraria* or a *Geranium*.

JASMINUM NUDIFLORUM will be a great acquisition to a cool greenhouse in winter. When plants are obtained of good strength, all that will be necessary will be to prune or stump back well every spring, and plunge the pot in a good position out of doors in summer, mulching with some rotten dung, and watering when necessary, so as to cause a profusion of shoots not over-strong; and by November, and onwards through the winter, these shoots will be studded with their bright yellow, though scentless blossoms, the care required being merely placing it where it will be free from cold rains and frosts, both of which injure the flowers when the plants are out of doors. The commonest soil suits it, but rich loam would be the best for pot culture.

WINDOW GARDENING.—I rather think I forgot this *Jasmine* and the *Tree Carnations* when giving a list for our window gardeners; but both of them would answer well where a moderate quantity of fresh air can be given them. In speaking of opening the door, the other week, for changing the atmosphere in a room, I by no means inferred that it would not be desirable to open the top sash frequently, even for an inch or two, for the benefit of the plants. The amateur will find many means of doing this without creating dangerous and unpleasant draughts in winter. What I chiefly wanted to inculcate was, that something more was necessary for a plant in a window than merely letting it alone, and leaving it to shift for itself as it best could.

STOVE PLANTS.—"A CORRESPONDENT WITH LITTLE ROOM" wishes to have three showy, hardy, and easily-grown plants to bloom in this and the following month, or say from November to January and onwards; and I hardly know any better than *Eranthemum pulchellum* and *verrucosum*, *Justicia flavicoma* (the *J. calytricha* of THE COTTAGE GARDENER'S DICTIONARY), and the *Poinsettia pulcherrima*. The first is blue, the second orange yellow, the third is bright crimson. Were an additional plant wanted I would add a *Zygopetalum*, and were a fifth necessary I would select a *Begonia Fuchsioides*, or one of the *nitida* group. The treatment of these has often been given. I think I mentioned lately that in many places the beautiful bracts of the *Poinsettia* came small last year. Practical observation would now seem to say that to have fine heads of crimson bract leaves the plants should not be kept much after their second season.

With some unavoidable interruptions these monthly lists are now finished. The difficulty has been to know where to extend and where to abridge, so that after all they are only meagre helps. I had no great hopes of their utility, and I am somewhat sceptical still, though I have received many encouraging assurances to the contrary. Many subscribers thought them desirable, and then the attempt to meet their wishes became not only a duty but a pleasure.

R. FISH.

CAULIFLOWERS.

Few things are really more acceptable at table than a good Cauliflower, which, with the aid of its relative the Broccoli, is generally expected to furnish a dish every day in the year, or nearly so; for cases will arise where the regular supply may be interrupted by severe weather in winter. In a very hot summer and very dry situations an evil of another kind will be found exceedingly difficult to combat; but that it may in some measure be

remedied is the purpose of the present chapter to show, as well as to point out a few of the means whereby the supply of Cauliflowers may be extended as far as possible.

In the first place, it is proper to insure the purity of the seed intended to be sown, for, like everything else, the Cauliflower is liable to degenerate; and, what is more, there is more difficulty in obtaining seed from this plant than from Turnips, or many others of the Cabbage tribe to which it is related. I believe we buyers are partly the cause of this and other articles being adulterated, for, being all anxious to buy at the cheapest market, the fair trader is obliged, though reluctantly, to meet the requirements of the time by making one ounce of Cauliflower seed into two or three, by mixing some seed of a similar size with it which has undergone some process that destroys its vitality. Whether this be so or not it is not necessary here to mention; certain it is that Cauliflower seeds do not produce so many plants for the seed sown as many other things. I would, therefore, advise the buyer not to begrudge a fair price. Cauliflower seed cannot be grown, in the majority of seasons, to retail with a profit at a less price than two shillings per ounce; and more than that may be fairly asked for a genuine article.

Good seed being obtained, the first sowing in the year is generally made under glass in some well-sheltered sunny place, if on a slight hotbed so much the better. Observe that the glass must be removed very early, so as not to draw the plants, but some protection may be put on during the cold nights of early spring, and the plants planted out for good towards the end of April or May. These will be the second crop of the season, the first being from plants sown in autumn, and protected during winter under glass, or in some other way, as will be shown presently. Successional batches of seed may be sown at intervals until the end of June or beginning of July, after which it is not necessary to sow again until the end of August or 1st of September, which is for standing the winter as above. This is by far the most important of all the sowings, and the welfare of the plants during winter and their coming into use in early summer are of great consequence to all who have to provide for the wants of a family. In a general way the difficulty is thought nothing of in large gardens, where handglasses and other accommodation are plentiful; but with those of more limited means this is not so easily accomplished. The main object is to get a good supply of young plants, which is not by any means so easy a matter in September as in June. Sow in some old Melon or Cucumber bed, if any should be out of use; or, in default of that, sow in some place where a spare light or two can be placed over the bed for a few days to encourage the germination, and that once effected, and the plants protected from the Turnip-fly by dustings with dry wood ashes, lime, or soot, or all three together, there is little difficulty in rearing them to the proper size, and where they are large enough to handle they may be planted into their winter quarters at once.

If handlights are to be had they are certainly the best for being placed where the plants, or part of them, are expected to remain till they mature their growth. The earliest ones of the season are expected then; consequently an early situation, as a south border, is the best for that purpose. About nine plants in an ordinary-sized handlight are sufficient; and after planting let the ground be made rather firm than loose by the foot pressing it. This, of course, must not be done if it is wet; but by this flattening the ground slugs and other enemies are less likely to find a lodging there, and when all danger from these marauders is over the ground can be easily stirred up again. This will be in early spring, when it is time to plant out all but those intended to remain for good.

The treatment of Cauliflowers during winter ought never to be such as to render them delicate—a complete exposure on all occasions when the weather is not severe, unless in some very heavy, cold rains, when it may be advisable to cover them up, leaving, however, some side openings for air, and by the middle of March the plants will have attained that sturdy growth which is the best of all proofs of their hardihood. A thick fleshy leaf, with short footstalks, is what is wanted, and plants so reared will have this character, especially those in the handlight; the others, which we will suppose to be sheltered in some frame, will also require the same abundance of air, and the result cannot fail to be satisfactory.

In very stiff, cold soils, it is proper to dig in some good rotten manure where the plants are to be, as a cold, retentive soil, however useful it may be in producing summer and autumn crops, is at variance with their coming into early use. It is, therefore, prudent to let the plants remain longer in the nursery bed than is usual when a drier soil has to be dealt with; and the ground being fixed on for planting them, let good-sized holes be dug for each, and some light dung or other opening matter be dug into each hole, and the plants carefully removed, with a spadeful of soil attached to each; in this way their removal is less felt than it otherwise would be, and they quickly come into use. Even on light soils it is prudent to take up with a spade, provided the removal be only a yard or two, as each one might be taken at once to the place allotted to it, and the removal be scarcely felt. A distance of not less than two feet each way ought to be allotted to them, and more if very large ones are wanted.

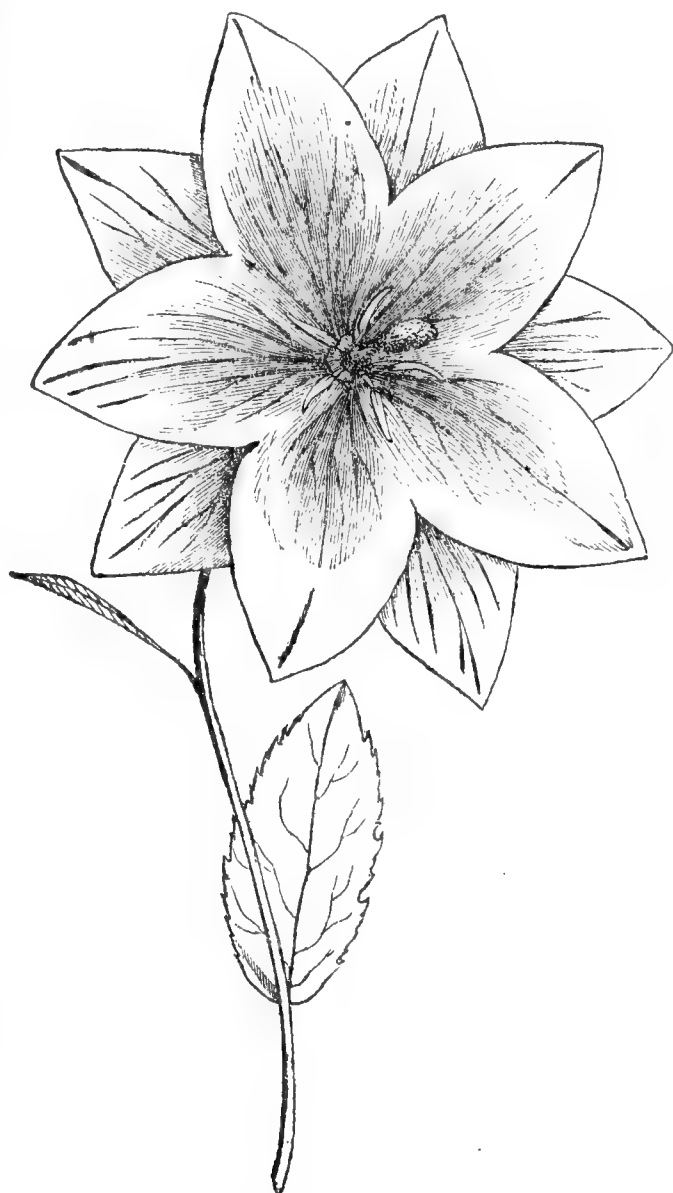
Other crops of Cauliflowers may be all treated in the way common to summer plants of the Cabbage tribe. A good rich soil, resting on a rather cool bottom, is best for this season; but, where one of a contrary kind has to be dealt with, endeavour to get a deep, healthy soil, which will allow this rather greedy feeder a sufficient amount of nourishment at a good depth from the surface, and where the summer's sun is but little felt. Hungry, dry sands, or gravel, will not, however, do, as these substances are by no means relished by anything in the kitchen-garden way; but if the staple soil could be deepened by the admixture of substances of a contrary kind, then there would be no difficulty in the case. It is, however, proper here to observe, that when the soil is indifferent it is better to give the plants more room laterally; but even with that advantage it sometimes happens that they cannot be prevented from growing prematurely into head, and are therefore useless. On such soils planting them out while very young and mulching over their roots is a good practice; and giving a good watering at times with manure water will stimulate their growth, the other conditions being all the same.

As has been said above, the crop for first general use ought to be sown about the 1st of September; the next crop under glass as early after the new year as possible; succeeding crops every ten days after the 1st of April, until the beginning of July, the last crop being those intended for late autumn or winter use, and may possibly suffer much during that time; but these, as well as all others, ought to be favoured with one of the best and openest situations in the garden. Certainly a few of those intended for use during the dry weather of the Dog-days might be planted behind a north wall, and some of the seed beds might be there also in hot weather; yet the Cauliflower, in general, is more impatient of shade than most things.

J. ROBSON.

PLATYCODON GRANDIFLORUS, WITH SEMI-DOUBLE WHITE FLOWERS.

SENT in April, 1845, from China, by Mr. Fortune, who found it cultivated in nursery gardens near Shanghae.



This is a striking variety of the beautiful *Platycodon grandiflorus*, remarkable for having pure white blossoms, consisting of one five-lobed corolla placed within another so exactly that the two constitute a large white star of ten points. There is no tendency to further irregularity of structure, unless it be that the two corollas of this variety are flatter than the single one of the wild blue form.

Although it is doubtful whether or not this beautiful thing will prove hardy, few will deny it room in their greenhouse. It appears to grow freely in any sort of soil, and to require an ample supply of water in summer. Like the generality of plants with fleshy roots it must be put to rest in autumn, so that in winter it may be kept quite dry. In spring it may be repotted and started to grow in the usual way. It strikes very freely from cuttings.—(*Horticultural Society's Journal*.)

CONSTRUCTING A FERNERY.

THE great drawback, in my opinion, to that lovely tribe of plants, the Ferns, is that in nine cases out of ten you will find them grown in pots. The consequence of such culture very often is that they are half starved for years in the same soil. They become brown, meagre-looking things; and I am not going too far if I call them objects of pity. To remedy this evil in the most natural way that I am aware of they should be planted out into borders, or rockwork, made

for this purpose. I would prefer them under a span-roofed house, with a side facing the twelve o'clock sun. I do not believe in a north aspect for Ferns. I have always found a few hours' sunshine of great advantage in producing that rich green colour in the fronds which adds so much to the real beauty of Ferns.

Now, supposing a house to be 100 feet long, say thirty feet wide, with a reasonable height, supported in the middle by pillars, and a door at each end, with the brick or stone-work four feet high, then for the rockwork get plenty of rustic-looking stones, such as you would use for a rockery. It does not matter how large they are if convenient to roll or lift into the house. Begin at one side, and place these stones from two to five feet from the side wall at intervals in a zigzag sort of way. By no means put them in a straight line, or else the work will look too formal. Let the stones slope up to the glass as far as you deem it prudent, so as not to obstruct too much of the light. Concluding you have both sides done in this manner, commence again with the centre of the house, using the largest stones for the bottom part. You may come as near the front as you think proper, bearing in mind to leave sufficient space for a path between the two rockworks. Pile the stones up round about and between the pillars in the coarsest way you can, the rougher the better, leaving projections here and there, so as to imitate Nature as much as you can. Avoid everything you can that looks artificial.

In the centre of the house, between two pillars, you may have a fountain or an aquarium, or both if you like, or one at each end, whichever you think most suitable.

When all this constructing is gone through the house will be found to look very rough indeed, and such as few would appreciate; but hold hard a bit—the best of it is to come yet.

To proceed further, it will be necessary to have plenty of Roman cement and clinkers, such as are taken from hothouse furnaces and iron works. Mix a little Portland cement with water till you get it about the same thickness as a bricklayer would use mortar. A little only should be mixed at a time, as it dries very quickly; and if water is added after it has got hard it will not stick so well. Begin now with your cement and clinkers, and build nests or pits for the plants here and there, large and small, as you find the cavities between the large stones to suit. I would advise large pits to be left between the pillars and any other prominent places for the large tree Ferns and some of the Palms, such as *Sabal Blackburniana*, *Latania Borbonica*, *Zamia horrida*, and many others.

If you have a good supply of water you may have a cascade or two by introducing a pipe underneath, having an outlet at the top of the rockwork. By using cement freely the water from the cascade may be prevented from running through the rockwork till it falls into the aquarium at the bottom.

Cover the pillars, and any other plain woodwork as well, up to the very top with cement and clinkers. The rafters may be covered with the bark of old Birch trees or any other rough material.

An archway may be made over the path by means of a strong iron hoop fixed in the rockwork at every five or six feet, and high enough to allow a person to walk conveniently underneath. Cover these arches over with cement and clinkers, and make a moderately large pit at the bottom of each, to be planted with *Cissus discolor* or any other climber according to taste. Coil these climbers round and round the arches till they are entirely covered.

When the rock-building is done it ought to be painted. This may be effected by mixing cement and hot lime together, adding soot to colour according to taste. I prefer a dark brown colour. This mixture may be poured on in large quantities, so as to cover all the stones and clinkers entirely. After this has dried, if a little oil paint of different colours is daubed over here and there it will be found to give a pleasing variety of colours.

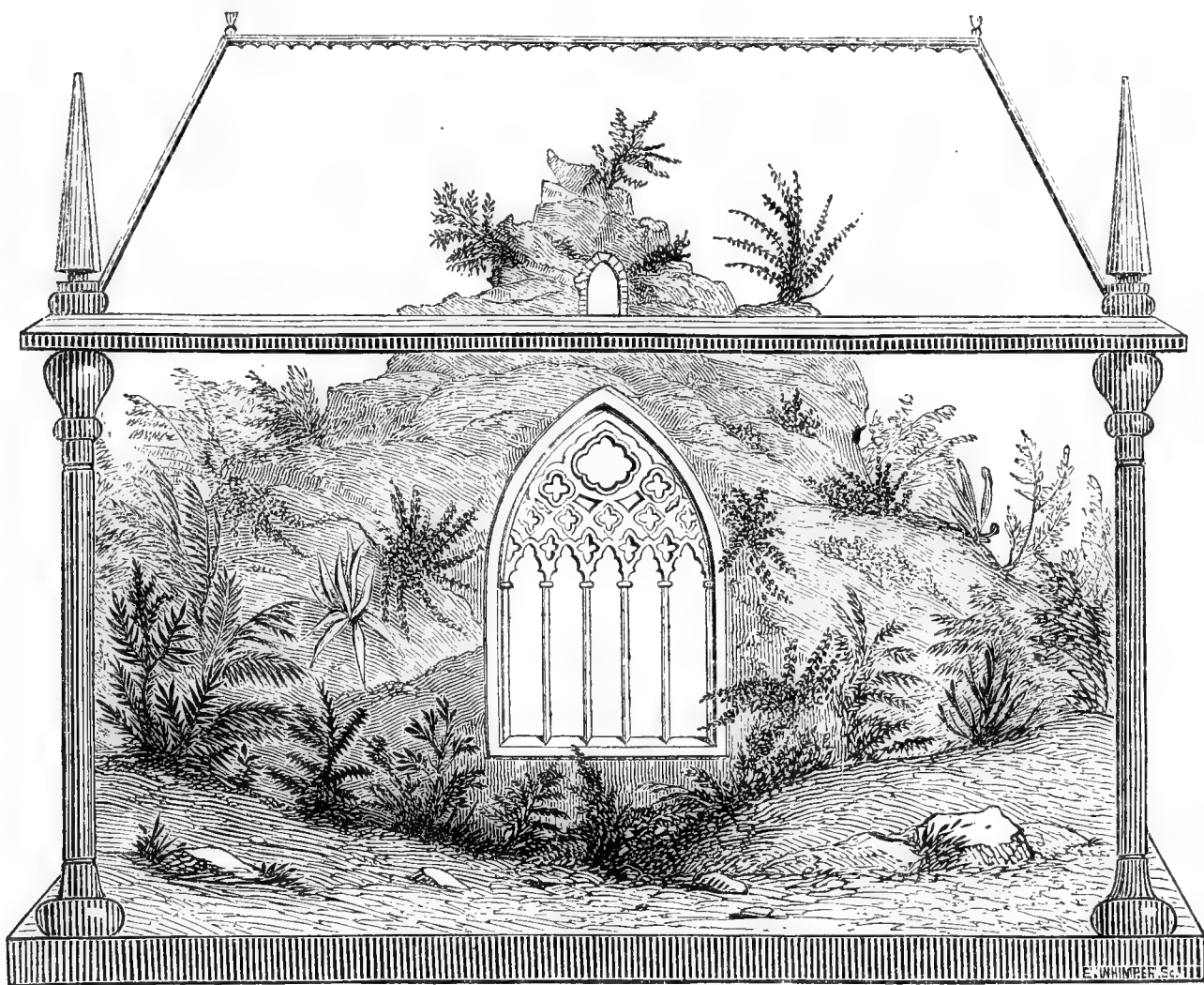
If a house, such as I have tried to describe, was made on a large scale, and planted with choice Ferns and Lycopods, they would grow luxuriantly and look quite at home, instead of being stuck up on a shelf in ever so many glaring red clay pots, as is too often the case. Here you would have, indeed, much in a small space, for it would combine

Fernery, fountains, cascades, aquarium, and caves, all in one.

The question may be asked, How is such a house to be heated? In reply to this I say, Place your hot-water pipes

under the path with an iron grating above them, so as to allow the heat to rise up; or you may have an open space of a foot or eighteen inches between the front wall and the rockwork for the pipes to be laid in.—CLERICUS.

WARDIAN CASE.



THIS Fern case was made from a leaky aquarium, glazed with sheet glass, in a cast iron framing. It contains thirty-eight Ferns and seven Lycopods.

The window inside, intended to represent one at Tintern Abbey, is constructed, in three thicknesses, of sheet cork, jointed with melted gutta percha, and surrounded by rockwork composed of clinker and Portland cement.

Abundant ventilation is afforded in this case, the roof being made on the principle of the small Fernery, which I described in No. 426 of THE COTTAGE GARDENER.

By a judicious arrangement of the rockwork a great many Ferns can be accommodated in chinks left for the purpose.

The internal dimensions of the case are—length 2 ft. 2 in., breadth 1 ft., depth 1 ft. 3 in.

The following is a list of the Ferns introduced:—

FERNS.		
1	<i>Adiantum assimile</i>	1 <i>Polypodium vulgare</i>
6	——— <i>capillus Veneris</i>	1 <i>Polystichum lonchitis</i>
1	——— <i>formosum</i>	2 <i>Pteris arguta</i>
1	——— <i>hispidulum</i>	3 ——— <i>serrulata</i>
6	<i>Asplenium ruta muraria</i>	5 <i>Scolopendrium vulgare</i>
1	——— <i>septentrionale</i>	—
2	——— <i>trichomanes</i>	38
1	<i>Blechnum boreale</i>	—
1	<i>Ceterach officinarum</i>	
1	<i>Cheilanthes odora</i>	
2	<i>Cystopteris fragilis</i>	
1	<i>Davallia Canariensis</i>	
1	<i>Onychium lucidum</i>	7
1	<i>Polypodium Cambricum</i>	—
		LYCOPODS.
		6 <i>Lycopodium dentatum</i>
		1 ——— <i>formosum</i>

E. A. COPLAND, *Bellefield*.

EXOTIC NURSERY, KING'S ROAD, LONDON.

(Continued from page 287.)

ANÆCTOCHILUS HOUSE.—Here the grand secrets are going on, and the place is private; but, like all the nurserymen, they showed me everything, and also explained things which I could not see then, for which all I can say, till I am a rich man, is, that I was very much obliged; and if I am not a very good gardener after all these revelations, that is not their fault. Why, there are as many Pitcher-plants from seeds in this house as would pitch up a hundred houses. I never heard of

seedling Pitchers before, or that the plants seeded in England; or, if they did, whether they were not as bad to grow as Orchid seeds. Well, there are hundreds of the prettiest little Pitcher-plants you ever saw in 60-sized pots, and some in 48's, with from four to six leaves on, and a pitcher at the end of every one of them. *Ampulacea* is the kind of which they have the most seedlings, and that kind is now sold at less than one half the price it bore two or three years back; then it is such an

easy one to grow that anybody might try it, and very little room will do for it; then, to see how it seeds, and how easily the seeds are got to grow, nobody will be without a Pitcher-plant now who can give the proper heat.

The way to grow the seeds is the most curious of all. In the number of *Jameson's Journal* for April, 1830, there is a good account of the germination of *Nepenthes* seeds, from which it was "concluded," by Dr. Lindley, "that the long, loose tunic of the seed is intended to act first as a buoy to float upon the surface of the water, and afterwards as an anchor to keep it fast upon the mud, until it can have struck root." This ingenious conclusion is not borne out by facts from the cultivator. The seeds are not unlike those of the Bornean *Rhododendrons*, whose foliaceous appendages agree with the "loose tunic" of *Nepenthes*. The similarity suggested the same mode of treatment as is given to the seeds of tree *Rhododendrons*, and the result shows the practical "conclusion" to have been the right one; but anybody who can grow *Rhododendrons* from seeds in strong heat cannot do better than get an *ampullacea* Pitcher-plant, seed it, and draw his own conclusion, that it would be a triumph of skill to have a hundred seedlings of it for one's self.

But about the *Anætochilids*, I never saw such a sweep in all my days. They propagate them as fast as a March hare; and some of the kinds are down one-third in price already on that account. There are hundreds of them, and the secret, like all extraordinary things, is very simple when you know it. Just cut a plant, and all parts of a plant, as they cut the potatoes in Ireland for "seed," and every piece will grow; but without an eye no piece, however big, will grow "if it was ever so" well attended to. There was one fine new dark velvety-leaved kind, with gold veins, not yet named; some hundreds of *setaceus*, and the different varieties of it; but such new kinds as *Lowii*, *Lobbii*, and three or four others are not large enough yet to be cut up like potatoes, consequently they are scarce yet. There are many other secrets to be told out of this private *sanctum*, but I should not finish till Midsummer if I were to tell all as I go along.

STEPHANOTIS HOUSE.—This was the low, long, span-roofed propagating house in which the *Ipomœa Learii* first bloomed in Europe; and the finest bloom I ever yet saw on it was in this very house, when we counted 4,643 blooms fully open one forenoon. The next best show of it I had myself in the conservatory at Shrubland Park, where the plant was much more at home than in a stove, as, unless a shoot actually touched the pent-roof glass, it never had a red spider on it, though the house was not syringed after the end of June. Well, both sides of the roof are now covered with *Stephanotis* from end to end in horizontal lengths. It flowers better and much longer that way than when it is *trained up* like a Vine; but I have seen it very good from a narrow back border, up the back wall and *down the rafters*, as the Vines were at Holly Mount, Malvern, when Princess Victoria "lived" at Holly Mount, which Vines then bore as fine Grapes and crops as ever were seen.

The house is now devoted to the young stock of the most-called-for stove plants, and I was particularly well pleased with the arrangement, as it exemplifies a system which I always recommend for the stock of bedding plants, which is to have every kind kept together in one place, and then you know at once, if the plant you want is not to be found in its proper place, it is not on the establishment. The house, sixty feet long, is divided down the centre by a path, with a bed on either side, and the different kinds are set together in rows across these beds, with a row of some more conspicuous kind to divide one kind from another, thus:—Several rows of *Statice latifolia*, *arborea*, *Holdfordi*, and *macro-*

phylla, a very fine kind; then a row of *S. imbricata*, a very distinct kind, and rather scarce, divides them from as many rows of *Stephanotis floribunda*, from English saved seeds; then *Gardenias* of sorts; then *Thyrsacanthus rutilans*, for which there is a greater demand; then *Francisceas* of sorts; *Crotons* ditto; *Dracœnas*, *Ixoras*, *Medinillas*, *Æschynanthuses*, *Marantas*, *Aphelandras*, *Clerodendrum*s, *Jasminums*, *Pentlandias*, *Hibiscuses*, *Pentas*, *Justicias*, *Rondeletias*, new *Tecomas*, *Conocliniums*, *Pleromas*, *Ropalas*, *Meyenias*, *Eucharis Amazonica* and *grandiflora*, the new white splendid bulbs, *Tabernæmontanas*, *Vincas*, *Centradenias*, *Ardisias*, *Graptophyllum* (*Croton pictum*), *Euphorbia Jacquinifolia*, and others, all in large beds, and divided with such kinds as *Coleus Blumei* and *pectinata*, *Dracœna nobilis* and *terminalis*, *Dumbcanes*, and variegated *Crotons*; and as "storers," such plants as *Ropala Skinneri*, large *Thyrsacanthus*, *Pandanus variegatus*, *Eucharis* in bloom, *Statice macrophylla*, and lots of *Amherstia nobilis*, lately imported, and all doing well; and at the farthest sides, on shelves over the hot-water pipes, collections of *Begonias*, *Gesneriads*, *Impatiens*, including *Jerdoniæ*, and other soft stove stock of similar natures, as clean and fresh as a new pin, and all of them in constant demand.

SPECIMEN STOVE HOUSE.—There is a grand display in this house, which is a span-roofed house, twenty feet wide, and forty feet long, with a flat stage down the centre, and a side stage all round, the plants being all placed as for "effect" at a public show. Here I noted the following plants as most conspicuous:—*Maranta vittata*, four feet high; *Croton variegatum* and *pictum*, very fine; *Medinilla magnifica*, ditto; variegated *Anassa*, or Pine Apple, one of which was in fruit; *Aralia pulchra*, *longifolia*, *Japonica*, and *papyrifera*; *Hippomane spinosa*, with leaves eighteen inches long, and five broad, spined like a *Berberis*; *Ropala Jonghi*, another new kind from M. de Jongh's collector in Brazil: it has the broadest leaves of all we know of in that genus. *Begonia tomentosa*, with leaves fifteen inches by twelve inches; *Theophrastus* of sorts; *Imatophyllum miniatum*, the beautiful new bulb from South Africa, so called by Mr. Backhouse, of York; *Ficus Sieboldi*, with leaves twelve by fifteen inches, very fine; *Atrocarpus rigida* and *incisa*; *Ixoras*, very large; *Pavetta Borbonica*, ditto; a strong *Billbergia gigantea*, with leaves five feet long; *Nidularium fulgens*; lots of the new *Begonia picta*; *Tradescantia odoratissima*, with splendid purple leaves. The roof is clothed with such climbers as *Hoya imperialis*, *Allamandas*, *Combretum purpureum*, *Ipomœa Horsfalliæ*, *Bignonia venusta*, and a beautiful new *Marcgravia* clinging up to the wall like Ivy, but very different in the leaf.

SPECIMEN AZALEA HOUSE.—This house is fifty-five feet long and twenty-two feet wide, with a sloping stage to the back wall, and is brimful of *specimen* plants of all the best kinds of the Chinese breed of Azaleas. The front stage was full of smaller plants of the same kinds. The average size of the large plants is four feet by four feet, and every one of them is "set" for a magnificent bloom; but to name them would only be to write out a complete catalogue.

CAMELLIAS.—The old span-roofed Orchid house, fifty-five feet by fifteen, and a north house, fifty-five feet by sixteen, are full of Camellias, to which the same remarks as those on the Azaleas may suffice till the two families are in bloom, and then!

NEW HOLLAND HOUSE.—A span, fifty feet long by eighteen feet wide, and all the plants set for "effect" most effectually. What or which is really the best plant from New Holland I will just tell you—a plant from Old Holland, or from somewhere over the Dutch water. It is a seedling improvement on a New Holland Acacia, the *A. longifolia magnifica*. It would be hard to know what a student of Cicero would say to that name; but,

as a student of prophecy, I have little hesitation in saying that there will be a magnificently long "run" on this new *Acacia*, although I have never seen the flowers. *Acacia Drummondii* is the second best, and the next twenty kinds are about equally good, but I have no time or room to name them to-day. Mr. Veitch can furnish the best forty kinds of them, and there are at least some hundreds of some of the best kinds, as *Drummondii*. Here were all the different kinds of *Tropæolums* in training; also the original plant of *Philesia buxifolia* and its young progeny; fine plants of *Grevillea robusta*; *Witsenia corymbosa* in sandy peat; *Cytisuses*, *Epacrises*, *Heaths*, *Chorozemas*, *Boronias*, *Aphelexis*, *Pimeleas*, *Eriostemons*, *Polygalas*, *Gompholobiums*, *Sweet Daphnes*, *Befaria æstuans* and *coarctata*, *Bouvardias* of sorts for bedding out; *Ceratostema longiflorum*, a fine plant; *Escallonia pterocladon*, like a white *Epacris*, but hardy or almost hardy; *Eugenia Ugni*, *apiculata*, and *oleoides*; *Gaylussacia pulcherrima*, *Luxemburgia ciliosa*, *Weinmannia*, *tricosperma*, and *pubescens*, with such fine leaves; *Veronicas*, *Thibaudia pulchra*, *Stadmannia australis*, *Telopea speciosissima*, *Lomatia ferruginea*, *Stenocarpus Cunninghamii*, *Lardizabala bitermata*, *Quadria heterophylla*, *Leptodactylon Californicum*, *Meyenia erecta*, a greenhouse as well as a stove plant, and in specimens to bloom out of doors; and why not, also, all kinds of older and better-known plants of this hardihood, which I shall enumerate and review more fully in my next and last chapter.

D. BEATON.

(To be continued.)

SURELY RATHER THAN SPEEDILY.

In the columns of your paper, at page 200, there is an article headed "Advice to Young Gardeners," which in itself is very good; in fact, if the course prescribed by my friend was adopted by us young gardeners, it would tend to raise us to something in the gardening world. But my reasons for troubling you about this at present are twofold. The first is, my friend, "our example of perseverance," introduces himself to our notice at the age of *ten*, at which time he enters a local nursery; he remains in it two years; he then seems to have been very fortunate, gets into a good place to all appearance, where he has the benefit of coming into contact with a good *variety*, as well as a large number of various descriptions of plants. Here another three years pass over his head. By this time he is in his fifteenth year. He has after this four changes, in each of which he remains two years, eight in all, which brings him to the manly age of *twenty-three*. He now, like many more, concludes that he has got to the *top of the tree*, because filling a "responsible situation as head gardener," by his own calculation, at the age of *twenty-two*.

The next thing I beg leave to call attention to is the forward spirit evinced by young gardeners, after getting into places for themselves, of boasting and straining themselves to their full, and often far beyond the strength of their powers. Such I have sometimes seen eased of their situations by their employers, the first or second year, as *incapables*. Such I hope, however, will not be the case with the "YORKSHIREMAN."

Now, in addition to his advice, I would add for the benefit of my young brethren in the trade, do not be too rash in taking a place for yourselves as *head* gardener; rather wait till you get more experience, both in your business and in the proper manner of conducting men, which I can scarcely let myself think can all be acquired at the age of twenty-two. If it is acquired at that age I am sure you will be no worse for a few more years' experience.—A YOUNG GARDENER IN THE NORTH OF SCOTLAND.

QUERIES AND ANSWERS.

SOIL ENCUMBERED WITH CROCUSES.

"I have a garden nearly overrun with bulbs of different sorts, the *Crocus* being the chief. They have, I hear, once

been in patches; but the garden has been dug, and they are scattered all over, and all colours mixed together. So scattered are they that there is scarcely room to set a foot without destroying some. There are, also, many other bulbs scattered, but the *Crocuses* are far the worst. I hear they make a very gay show in early spring, but I fear for the grass they will leave after them. I wish to know how I am to get rid of them. To take them up would be an 'endless work.'—A DARLINGTON SUBSCRIBER.

[*Crocuses* are the most difficult of all bulbs to get rid of, and they will trouble you for many years if you cannot get the bulbs picked out as you would *Potatoes*. When they are going out of bloom is the best time to battle with them; and all of them that are within an ordinary distance from the surface must be dug out just as you would *Potatoes*. Those that are very deep you must wear out by pulling up the leaves as soon and as often as they are long enough to get hold of. If you were to bury the whole of them by trenching the ground four feet deep they would all be up next season as if nothing had happened to them; so that there is no way of killing them except that of wearing them out, which takes a very long time to accomplish. We were once troubled with them just as you are, and we sympathise with you; but you may depend upon it there is no way of clearing them right out except as above. We would warn all amateurs against digging among *Crocuses* except when they can be seen above ground.]

HARDY ABIETINÆ.

"F. W. S. would thank the Editor of THE COTTAGE GARDENER to furnish him with a list of twelve *Abietinæ*, selected with a view to variety and proved hardiness, as well as moderate price."

[We suppose that you are aware that *Abietinæ* include but one section of *Conifers*, that is to say, the *Firs*, *Larches*, *Cedars*, *Pines*, *Araucarias*, *Dammars*, *Cunninghamias*, *Pheosphæras*, *Microcachys*, *Arthrolexis*, *Sequoias*, and *Sciadopitys*. For lawn plants we would select *Abies Canadensis*, *A. Douglasii*, *A. Fraseri*, *A. Cephalonica*, and *A. Khutrow*, as very cheap and handsome trees, but not the best of them. *Larches* we would pass over, and of *Cedars* we would select the *Deodar*, *Cedar of Lebanon*, and the *Mount Atlas Cedar*. Of the *Pines* we would take *insignis*, *Benthamiana*, *pinæa*, or *Stone Pine*, and *cembra*, that is, two of the oldest and two of the newer ones; then *Araucaria imbricata* and *Sequoia sempervirens*, alias *Taxodium sempervirens*. There are none cheaper than these, and, at the same time, so good, till we come to the common *Spruces*, *Scotch Firs*, and *Silver Firs*.]

TO CORRESPONDENTS.

CLERGYMAN'S RIGHT TO REMOVE HOTHOUSE (Rev. H. C. K.).—The case recently decided, though incorrectly reported by a gardening contemporary, determines that either an incumbent or his executors may remove expensive hothouses which he has erected. There are certain restrictions, however, and we hope to obtain fuller particulars in time for next week.

FLOWER-GARDEN PLANS (F. G.).—We cannot give designs for gardens we have not seen, nor can any one who wishes to act correctly. Buy our No. 217; there is a plan there which may suit you, but you must judge entirely for yourself.

EARLY POTATOES (P. B.).—The best early and productive *Potato* is the true *Ash-leaved Kidney*, but not the *Walnut-leaved*, which is sometimes confounded with it. The next best early, and which we grow for our main crop, ripening in July, and keeping well, is a round variety we received from Woodstock, called *Miss Sanger's Seedling*, or some such name. Ripening thus early, it is out of the way before the time usual for the murrain to appear.

SHORTENING PEACH TREE SHOOTS (A. Loftus).—Your sorts are very good. The necessary shortening will depend greatly on the state of the roots. You would see from articles lately the folly of shortening too much; still, under the circumstances you name, we should be inclined to remove the side or secondary shoots if not thoroughly well ripened, and take one-third off the ends of the strongest ones. If the shoots of *Peach* and *Nectarine* trees are not judiciously shortened the middle of the trees gets naked and unfruitful.

ACACIAS, GARDENIAS, &c. (Haslingden).—If you have the volumes for some years you will find information on everything you mention. *Greenhouse Acacias* require two parts loam and one of peat, an average temperature of 38° to 48° in winter, plenty of drainage, plenty of water, plenty of air when the outside temperature is above 40°, and a shady place out of doors in summer. *Gardenias* require, also, peat and

loam, plenty of sun in summer and autumn, housed in a temperature of 45°, and in spring forced a little, and, best of all, placed in a sweet, mild hotbed until the flowers begin to open. You will find much about *Begonias*. Tell us what you have got, and we will try and meet your case; some die down, others require to be cut down. We presume you mean the *Gesnera zebрина*. Let it remain dry and torpid until towards April; then turn out the scaly tubers, and start them in light sandy soil in a Cucumber bed; but after the shoots show, you must let no condensed steam see them, nor yet the full rays of the sun if the plants are at all near the glass. There has been a good deal about *Torenia* lately. Keep in 50° to 55° in winter, and what heat you like in summer. If these do not suffice, write again, and more particularly, but about fewer matters at once.

HARDY PLANTS FOR A TRELLIS (*G. F. Chadwick*).—Among soft-wooded plants nothing is more beautiful than the varieties of *Tropæolum tricolorum*, and then *Maurandias*, *Thunbergias*, &c., are very beautiful. Among hard-wooded plants we might instance the *Kennedya Marryatta*, *inophylla*, *prostrata*, and *ovata*, and *Zichya coccinea*, *tricolor*, *angustifolia*, and *heterophylla*. We shall have more to say on this before long.

THE POULTRY CHRONICLE.

LIVERPOOL POULTRY SHOW.

WE have lately described a Poultry Show held in a Palace, and now one is before us held among Princes—the Merchant Princes—of the Mersey. As the desperate villain of the melo-drama often goes to his fate surrounded by the brightest possible flames, and as the great effect of the overture of the opera is reserved for the *finale*, so our Poultry Show season closes with its greatest efforts and its choicest gatherings. Birmingham and Liverpool have heretofore been the two great events. This year they have had worthy colleagues in the Crystal Palace and Preston. Three have been described. The fourth now supplies our subject. It is the last great competition of the season, and the stars put forth all their effulgence. What a report we should have to write, if, after the manner of the poets of old, we described the competitors and their achievements in detail—classes made up of winners. All the antagonists touch their adversary's shield with the point of the lance, and the unsuccessful must brood over their defeat till another season begins. How it would sound in rhyme, after the old ballad style, but paraphrased—

"First came Sir Lancelot du Lac,
Next Tristram known of old,
The third was valiant Caradac,
Who won the cup of gold."

How many birds known of old! How many winners of cups! But as a faulty lance or a slip of the war horse would cause the knight to lose the prize, so many accidents may interfere with the success of a pen. Though we have it not on record, yet we doubt not a gallant knight was sometimes unable to run his course, being tormented with a "horrible toothache," or was doubled up with lumbago or rheumatism, and as his honour was not scathed thereby, so a first-rate pen may, by the indisposition of the cock, or a little touch of roup in the hens, miss honour to which they would otherwise be well entitled. The unsuccessful must then comfort themselves with these crumbs, and they may add thereto that they should be unsuccessful sometimes, in order to give a gleam of comfort to those who seem fated to be ever striving. We suppose one rule will apply to many things, although they appear dissimilar; and as even our reports should convey poultry knowledge to our readers, so we cannot help diverging to remark on the sameness there is, in one respect, between getting a first prize and climbing a greasy pole for a new hat. We hope no exhibitor will be offended at the parallel, as the application is general, and belongs to ambition of every class. The nearer you get to success, the more difficult she is to grasp. When at a distance you could devour space, and it seemed that a few steps only were required to enable you to clutch her; now you all but touch her, and she eludes you. It is so with the pole: the ambitious youth starts, the pole is large, there is good purchase, and he mounts apace. He is prepared with a pocketful of sand for the top, and already in his mind he wears the hat to church; but the pole gets less and less; it is more slippery at every struggle; could he but spare one hand to get to his pocket—but no, it requires both to keep him where he is. He will get the hat, and he does get it; but how difficult the last effort! Just so an exhibitor starts

with the mass, he determines and soon reaches the high commendation, he accomplishes third, and then second prize; from second to first seems nothing, a pound or a feather will do it; but it is here the pole gets smaller and more slippery—it is here that every effort seems required to remain even stationary. The exhibitor does get up, but he only can tell how hard it was at the last.

We must now proceed, as briefly as may be, to comment on the classes as they occur, and to point to such birds as may appear to us to deserve especial mention, merely premising that all the birds exhibited were of very high merit, and that the experiment of charging a large sum, and thereby limiting the entries to the number the Committee can properly accommodate, has been highly successful. With the addition of such a class as we shall have shortly to notice, it will not be saying too much, or predicting at random, to declare that the path of the Liverpool Poultry Show is now in the highest walks of the pursuit, and that the exertions of the Committee will, beyond any doubt, meet with a rich reward of deserved success. Mr. Davies again took the Cup for *Spanish*. His birds left nothing to desire, either in condition or quality. Mr. Brundrit stood first in chickens. Messrs. Tate and Fell were second, hard run by Captain Hornby in both classes. The Judges declared the class "excellent." The Rev. S. Donne was first on the list for old *coloured Dorkings*, but he was obliged to yield the first prize for chickens, and also the Cup, to Captain Hornby, who showed birds which proved he still knows how to regain his old post. Many of those shown in these classes were of unusual weight, and we have never seen so many first-class birds in so small a number. The *Cochin-Chinas* were good, but certainly not equal to those we have seen of late. In many instances birds of very unequal merit were put in the same pen. Mr. T. Stretch took three prizes and the Cup. His birds were good, but everything was thrown into the shade by a hen shown as extra stock by Captain Snell. We have never in our lives seen her equal, and, if her comb were quite straight, it is not saying too much to pronounce her beyond doubt or contradiction *the best hen in England*, and her owner will exhibit her against any other. A much-respected exhibitor took the Cup for Grouse birds—Mr. Adkins, of Birmingham. Mrs. Herbert and Mr. Chase sharply contested the White, taking alternately first and second, with very good birds.

We now come to the class of classes, that in which Liverpool more than excels—we allude to the *Game*. It must suffice to say that in each class there were birds of surpassing merit, and the names of the successful will be a guarantee for it. *Golden-pencilled Hamburgs* were perfect, and among the old birds a pen of Mr. W. Worrall's deservedly took the Cup. Mr. Botham's chickens, and those belonging to Mr. Banks, also deserve especial mention. The *Silver* were very good, and the four usual names will be found among them, the Rev. T. L. Fellowes and Mr. Archer still playing their game of see-saw—the former took for old, the latter for young. We have never seen the Golden and Silver-spangled better than they were here. Mr. W. Worrall again added to his sideboard, but was beaten in chickens by Mr. Kershaw. The amateurs of these birds deserve every praise, especially the owners of the *Silver* chickens; but, having now accomplished the white ear-lobe, we strongly advise them to curtail the combs of the cocks a little. We need hardly say that Mr. Dixon appears in the prize-lists throughout these classes.

We fear our readers will find our report a continual panegyric, but it is unavoidable. The *Poland* classes left nothing to desire; all were equally good. Mr. Coleridge took the Cup with a pen of *Golden*. Mr. Tweed's celebrated hens were there, of course, at the head of the list. Mr. Greenall's birds were beautiful, and so were those of Messrs. Teebay, Adkins, Fell, and Brundrit. The *Golden* were better than the *Silver Bantams*. Mr. Wright took the Cup. Mr. W. Vernon showed a beautiful pen of *Black Bantams*. *Aylesbury Ducks* were in small numbers, but *Rouens* made amends. Mr. Theed Pearse won the Cup deservedly. Lord Berwick's *Brown Call Ducks* were perfect, and the same may be said of Mr. Neilson's *Turkeys*.

In all the *Single Cock* classes the competition was excessive, but all were child's play to Class F, consisting of ninety entries of the best *Game Cocks* England could produce,

brought to compete for two Cups respectively worth ten and five guineas. The Committee, with a liberality which seems to be natural to them, kindly placed two extra cups at the disposal of the Judge. This was a help, but the difficulty of awarding even four prizes where twenty were worthy was very great. We cannot speak too highly of the beauty of this class. Duckwings, Duns, Blacks, Whites, Red Breasts, Black Breasts, Piles—all showed themselves to the best advantage, and formed such an exhibition as has not before been seen. Every one was delighted with it, and the result was a class for 1858 consisting of one hundred entries at £1 each, to compete for prizes of £10, £20, £10, and two of £5. There were seventy-one entries for this class in forty-eight hours.

Our task now closes, with every expression of congratulation and respect for the Committee who provide such a treat for the poultry world, and for the liberal and comfortable manner in which it is conducted. It is hard to say what measure of success is before them; but whatever it may be it will not exceed their deserts.

The Judges were the Rev. R. Pulleine and Mr. John Bailly.

PRIZES FOR GENERAL COLLECTIONS.— BIRDS DYING AT SHOWS.

KNOWING, Mr. Editor, your unvarying willingness to aid by any available means the real well-doing of the poultry movement, I hope on the present occasion, through your permission, to lay before your readers generally, and the managers of our public Exhibitions more particularly, two objections that call loudly for revision.

First, then, as to the monster Silver Cups offered for "*the best general collection*," that have recently become almost incidental at the chief of our larger Shows. Such premiums have undoubtedly their benefits, and produce certain well-known and high competition; but, on the other hand, they have their grave objections also.

My personal experience in the carrying out of Poultry Shows convinces me, beyond all doubt, that the most powerful incentive to success at such meetings, either present or future ones, is, that the competition, and, consequently, the final triumphs, should be as "*broadly sown*" as possible. If the greater bulk of the prizes fall to the lot of a few individuals the public interest in such Exhibitions is lessened in exact relative proportions, and the ardour of the great body of amateurs, whose confined space or means permit only the cultivation of a very restricted number of varieties, decreases in a similar degree. These latter parties actually and almost universally withdraw from so *unequal* a competition, well considering the utter hopelessness of so doing. They could compete with at least "*hope of success*" in the general classes for accustomed premiums, but have not the temerity to enter the lists with the colossal opponents who usually secure eventually these larger rewards. They feel the positive inability of successful competition, well knowing, however meritorious their own specimens may prove themselves, the pressure of immense quantities of pens from some extensive competitor will at once swamp their individual exertions. I have known three dozen pens thus entered by one single exhibitor, and what chance remains to the man of limited means I need not portray. The regulations laid down are customarily these—"for the best general collection of not less than three varieties, five varieties," and so forth. Then comes the final appropriation of the really valuable trophy by, perchance, twenty or even more varieties being shown by a *single* party.

I know I am treading on the toes of friends whom I personally esteem, and with whom I am certain this feeling is reciprocal; but private interests should ever be conceded to the general weal. I therefore suggest as remedial the following restriction:—That in cases of "*general collection Cups*," not only should the minimum of pens competing be affixed, but the extent of numbers shown by one individual for such prizes should be limited likewise; say, for instance, "*not less than six, nor more than twelve pens*." Numbers, of course, must rest with Committees themselves, and also on the relative advantages of their peculiar exhibition; but, however arranged, the "*principle*" is the same. Do not,

as by present arrangement, drive away the multitude of small exhibitors in the hopelessness of despair. The effects of so doing on the financial department tell heavily, as no doubt exists in my mind that every successful exhibitor adds interest to the adventure, and naturally and invariably uses his utmost exertions to induce the attendance of his acquaintances to view hopes long cherished at length publicly realised.

The other item refers to fowls dying during the time they are exhibited. My remarks made in the former instance pertained simply to the pecuniary welfare of Poultry Shows; my present ones are, on the contrary, promulgated to obviate altogether those "*heart burnings*" frequently, possibly, indulged in without "*cause or reason*," but of which, I regret to say, in some few isolated instances, there have been true proofs of existence so closely brought home to individuals, as to suggest cogent reasons for the plan I intend offering for universal adoption.

In explanation. A fowl of great value never returned to its owner, and its death was recorded as the reason of its absence. It was deemed unsatisfactory by the exhibitor, and my advice was asked in the matter. I tried to solace the vexation of the party by expressing *my* conviction at that time of the demise of the bird. I was, however, mistaken. Somewhat under a year from that incident, the *same* fowl was exhibited at a minor exhibition, and at once recognised on my first glance through the Show, before proceeding to the arbitrations. I pressed the point to the present Committee; they at length agreed to a telegraphic message to the stated original owner, and the adjudications proceeded, interrupted, however, I frankly admit, by somewhat repeated references to the fowl in question. Long before the opening the owner arrived, certainly somewhat unduly excited by intensity of feeling, and at the most prudent suggestion of the chairman of the Committee "*reduced to writing*" a private and unseen mark, as the bird stood penned, proving its individuality. In breathless suspense, this done, all awaited the result, and the truth was demonstrated. Next came a far more distressing scene. The reputed owner of the bird was "*sent for*," and I regret to say, as is too commonly the case, in such, to use the mildest term, indiscretions, he added untruth to criminality, hoping, no doubt, to avoid detection thereby; but circumstances pressing both sorely and closely, the final result was the most heart-breaking humiliation and abject apology, with a monetary gift of many times the value of the (I will now say) stolen fowl into the bargain; and this being duly paid to a charitable institution, and the bird restored to its proper proprietor, I abstain from farther exposure than simply stating that the fowl was returned at the time it was first missed as "*dead*" by the party actually stealing it, though at the suggestion and reward of the first-named transgressor. It was taken not *in* the Show, but during the transit to the railway, whilst subjected to the guardianship of the thief himself, and when taken from the package was left by the wayside at the house of an acquaintance.

I cannot dwell on this truly miserable incident without at least drawing the attention of the young especially to the moral it conveys. There was a young man of undoubtedly respectable connections, recently married, with bright prospects before him, compelled thus by shame to forego his fast-improving practice, and to recommence, I trust, a more honourable career in another and far distant locality. How true it is that honesty is always the best policy! Although I hear that other such cases have occurred, I trust and do believe they are few and very far between, and in some instances exaggerated by party feeling. All such incidents, whether enforced by rumour alone, or by stern, indisputable facts, have a natural and unerring tendency to produce general suspicion, and consequent injury to Poultry Shows. They have, likewise, another most objectionable feature. Doubts once engendered, suspicion oftentimes attaches itself most unjustly to the innocent, whilst the actual offender, perchance, even encourages the feeling, the better to screen from the knowledge of his fellow-man the villany of which his own act has proved him capable. Such was the practice in the case detailed. It is happily true that the prevention of any such dilemma is as easy as it is effective.

I beg to suggest to all Committees for the future to

make it a part of their regulations, "that all fowls dying during the Exhibition will be returned to their owners." The better way, perhaps, of so doing is to sew the dead fowl in a piece of common calico, and then firmly attach it to the inside of the lid of the basket containing the other still living specimens. It thus will be placed under the proprietor's inspection, who, although mortified at his loss, cannot, these plans adopted, impute treachery to any one.—EDWARD HEWITT, *Eden Cottage, Sparkbrook, Birmingham.*

THE SPANGLED POLISH CLASSES AT THE LATE CRYSTAL PALACE SHOW.

I HAVE no liking for the office of fault-finder; indeed, I cannot think it a pleasant duty for any one to undertake, and I am not one who often take it upon myself, this being the first time, I believe, that I have ever appeared in that capacity in your pages; but some of the judgments in the Spangled Polish classes at the late Crystal Palace Show so astonished me, that I determined, for once, to indulge in a little bit of that unpleasant duty.

The classes to which I most particularly refer, as being badly judged, were those of the adult Gold and Silver Polands, those breeds being my more especial favourites. I was certainly vexed, when I walked up to the first prize pen in the adult Gold Polands, to find that their crests were of the old-fashioned dark sort; in fact, one hen had an almost black crest, and the other had one which was nearly black in front, and almost as nearly white behind. I am not one who much objects to a little white in the crest of an aged Spangled Poland fowl, because I believe that it is impossible to get them without white, in some degree, after the first moult; but these birds did not match, as one had a black crest, and the other one had a great deal of white in it. Besides all this, they were, in my opinion, too dark in the body, and the cock had an exceedingly bad crest, hanging forward in a very great degree. Now, Mr. Bush's second prize pen, to my mind, should have been first, as it really contained all good birds, and well matched, of the laced-crested breed, with well-defined spangles on a clear golden ground colour. I likewise thought that Mr. Bush's unnoticed pen should have been second, and then the pen which actually took the first prize might have come third. In the third prize pen there was one hen which, if I am not much mistaken, had a twisted tail. I watched her a good while, and although she changed her position several times, she always held her tail on one side. Mr. Coleridge and Master Horner both showed excellent birds, but they both committed the same mistake in putting a humped hen in their pen.

In the Golden Poland chicken class the judgments were quite to my mind. Not so, altogether, in the next class, the adult Silvers, as, in the first prize pen, although the hens really were quite first class, the cock was a poor bird, his crest being too forward, and also very scanty behind. The second and third prize pens were very beautiful birds. In the Silver chicken class the first prize pen was excellent, but I thought there were better birds in the class than either the second or third prize pens, as the cocks, I consider, had both twisted tails.

In the single cock class the second prize bird was wretched. He had an abundance of comb, and there were plenty of other birds in the class almost, if not quite, faultless. The White-crested Black classes contained good birds, and, I considered, were judged well.

And now, perhaps, nay, most likely, some will be ready to say, "Oh! he is only a disappointed exhibitor." If this should be the case, those who might say so would, indeed, be quite beside the mark, for the writer of this article was not an exhibitor at all, and so, I hope, will be admitted as an impartial witness. However, whether this be so or not, these are in truth my opinions, and I know I do not stand alone. Having now performed this unpleasant bit of duty, I will conclude by hoping that I shall never have it to do again.—G. B.

HAMBURGH FOWLS.

"W. H.," in his answer to my letter of December 23rd, has confirmed the opinion I before held respecting these fowls, and the general opinion concerning them. He did not know how they laid or how tame they were. He had no doubt heard, like many others, that they were very middling layers, and as wild as Pheasants, and could not possibly be kept in confinement under any circumstances whatever, being subject to all the diseases that poultry flesh is heir to, and therefore took it for granted they were so. But now he has found out it is quite the contrary; they are not so very wild after all, and they lay capitally, so he is going to keep some close at home, and send for some more to keep them company. Believe me they are about as good fowls to lay as you can possibly get, "Spanish excepted;" and I have often wondered how such a number of eggs could possibly form, and so fast, after taking into consideration the small amount of food they consume, for they are little eaters, requiring but little more than the same number of Bantams generally receive, and then they will lay six days out of seven.

If others were to have them under their own eye, after the manner "W. H." has adopted, they, also, would soon form a different opinion of their merits. As far as regards fowls for the table they are scarcely of any service whatever, being so very small; still they are equal in this respect even, if not superior, to Cochins, for they never will get fat unless it is internally, which is not of any service whatever. Let me advise all who think of keeping fowls for the table to make sure of some Dorkings, and then when the bell has rung and they come to sit down to dinner they will not be disappointed.

But, after all, my experience has not confirmed the opinion of Mr. Tegetmeier, which, I believe, is the opinion also of many others, that Spangled Hamburgs are better layers than Pencilled; for several Golden-spangled pullets which I reared last year, and which are now eight months old, have only just begun to lay, although they have always gone on well, and have been, if any difference, better treated than the rest; yet, as I said before, the Silver-pencilled laid at about five months and a half; neither do the hens lay so soon after moulting, as the Silver-pencilled I have had lay during the time they were moulting, and feather quite as well too. With me the two Silver kinds lay better than the Golden, and Pencilled better than Spangled; yet I have not a Pencilled bird in my yard now, because mine are kept not so much for laying as for their beauty.

Poland fowls, too, are not so well looked after as I should wish to see them, considering what beautiful fowls they are. They are not such good winter layers as Hamburgs, but are first-rate layers in spring and summer, never wanting to sit; and, besides, they are a very tolerable table fowl, far superior to Hamburgs. They can also, I am certain, be kept in confinement, because they have laid famously with me (the Golden-spangled), kept in a wire aviary about eighteen feet by six. It is really quite a shame they had not more encouragement given to them at Liverpool, as your Hull correspondent very justly complains.—E. B., *Oxford.*

MANAGEMENT OF RABBITS.

(Continued from page 222.)

FEEDING AND GENERAL TREATMENT.

No animal requires more attention as to the regularity of feeding than the Fancy Rabbit, and no animal repays its owner more by a healthy and glossy appearance if this be punctually observed. It is a mistake to feed Rabbits more frequently than twice in the day, morning and evening; for if this be done the appetite is not rendered keen, and, consequently, part of the food is left and wasted, and the animal itself does not exhibit those unmistakable evidences of good health which it does when its really necessary habits and requirements are alone attended to.

Animals of this kind should never be supplied with more food at once than they can consume, else they will leave a portion, which, being breathed upon, they will not relish afterwards, unless pressed by the absolute pangs of hunger.

I have found, as a general rule, that Rabbits will thrive the best, "young or old," if supplied, morning and evening, with a single handful of oats, and another of greens. The latter I infinitely prefer to be *Dandelions* or *Swine Thistles*; but, when these cannot be obtained, sliced turnip, carrot, or any other garden vegetable will suffice. Occasionally it is well to give them a small handful of sweet hay, and if herby so much the better, about noon, which they greatly relish.

It is a mistake to imagine that young Rabbits are easily diseased by giving them a good supply of green meat; for, if liberally supplied with it when with their mother, if weaned at eight weeks old, and the supply be at that time *slightly* reduced, and then gradually increased again, it may be continued with *great* advantage; for a Rabbit will always become larger on plenty of green food than will one deprived of this natural source of moisture. Let the young fancier, however, beware how he feeds specimens purchased from another stock; for if the young Rabbits have *not* been accustomed to much green food, and the supply be *suddenly* increased, disease, and most probably death, will be the result. Few are in the habit of giving their Rabbits water or other fluid, which is, at best, a dangerous practice; for these creatures do not require it, nature having provided them with such ample means of absorbing the moisture necessary to life through the pores of the skin.

The hutches should be kept well strewed with *clean* straw, which is more wholesome as well as less expensive than hay; and, besides this, when hay is used the stock will not enjoy their mid-day supply. I think it an excellent plan to sprinkle the floor of each hutch with dry saw-dust before laying down the straw, as this absorbs part of the moisture, and keeps the animals sweeter and more healthy.

Again, I would earnestly impress upon the inexperienced fancier the immense importance of strict cleanliness. The hutches should be thoroughly scraped and brushed out *at least* once a week, and, as I before mentioned, it is well to have them lime-washed out two or three times each season. An occasional stiff mash of barley-meal will be a wholesome change in the diet, and it will be found to facilitate the fattening of this animal, especially in the winter time, when green meat is scarce.

MANAGEMENT FOR BREEDING PURPOSES.

When the young Rabbits are separated from the doe they may be allowed to run together till they are nearly three months old, when the bucks and does should be removed to separate hutches. Do not, however, remove them singly to separate hutches, for young Rabbits will eat and thrive better in numbers than singly; but when they become four or five months old the best specimens may be selected, and finally separated for breeding from, and the inferior ones may be left together to fatten.

The young doe should not be bred from till she is six months old at the earliest, and it is better to wait till she is eight months old, especially if she is of sufficient merit to compete for prizes, and I should never use the young buck till he has attained the age of eight months. It is better for an inexperienced fancier to begin with young specimens, otherwise he may be taken in, and may obtain Rabbits too old for breeding purposes, or suffering from some disease. Moreover, the experience he will necessarily acquire in rearing his young stock will greatly assist his further efforts, and will help to insure future success.

When the Rabbits have attained the age at which they may be permitted to breed, care should be taken that they are not unwisely mated. A young doe should breed with an older buck, and *vice versa*; thus a more healthy and well-developed offspring is the result, and it is of the utmost importance that they be not related. The doe should not be allowed to rear more than five or six young at a litter, else they will be puny, their points will be less perfectly developed, and, what is even of more importance, the doe will be pulled down in condition, and her constitution shaken. She ought not to have more than three or four litters in a season if a Fancy Rabbit, and these should be during the summer months, when there is no fear of the cold pinching or destroying the young, and when there is an abundant supply of green food, which helps to promote a good flow of milk. When the doe kindles, which she may

be expected to do from the twenty-eighth to the thirty-first day after conception, and which she will give notice of by carrying hay about in her mouth to make the nest, and by pulling the down from her own breast, she may be provided with a little milk and bread, given lukewarm, and kept very quiet for a day or two, at the end of which time she should be removed from the hutch, while the young are taken one by one from the nest and examined.

At this early period of their existence their marking may be readily distinguished, and thus the worthless ones may be culled out, and the best five or six may be permitted to remain. It is very seldom that a doe will destroy the young after she has fed them for a day or two, if the nest be not much disturbed in removing the inferior specimens; and, as this "overhauling" seems to be a necessary evil, as a doe will sometimes kindle ten or a dozen, if she is found to destroy her young more than once it is better to fat her for the table. A day or two before the doe is expected to kindle the slide should be fitted in the hutch, and the nest-box thus formed should be cleansed, so as to do away with the necessity of disturbing the young for that purpose till they come out of the nest. Every fancier ought to be provided with a diary, in which he may keep a memorandum of the date on which the Rabbits are mated and expected to kindle, besides being valuable to note down many circumstances which will occur in the course of a season's experience.—PERCY BOULTON.

FAREHAM POULTRY SHOW.

THE occurrence of many Shows at the same time makes it necessary to divide our reports, which we do as fairly as we can.

The above is one of those friendly and comfortable Shows, managed by a few gentlemen who love the pursuit, where all go to enjoy themselves. Committee and exhibitors are known to each other, and every one is interested in its success. The *Spanish* and *Dorkings* were excellent, worthy of any Show. The prize-list shows a long array of high commendations in both, no less than twenty-seven pens, and a fact worthy of notice, namely, that there were five pens of rose-combed birds, and the first prize was taken by one of them, showing that the ridiculous idea that they are not pure is fast losing ground. Mrs. Pettat's was a beautiful pen. The next that called for especial notice were the *Buff Cochins* of 1856. Mr. Vaux's birds were very good, as were those belonging to the ubiquitous and spirited exhibitor Mr. Rodbard. We were sorry to see that the Isle of Wight did not take one prize for *Game*. Where is the old reputation of the island for that breed? Messrs. James, Fox, and Rodbard showed well. Mr. R. James was strong in *Golden-spangled Hamburgs*, and the Judge was compelled to stop in high commendations of the *Golden-pencilled*, and to pronounce the whole class "very capital." Mr. James may, then boast, of his victory. Mr. T. P. Mew took both the first prizes for *Silver-pencilled*. There was little competition in the *Black Polands*. Mr. Coleridge won the piece of plate he gave for the best collection of *Polands*. Mrs. Pettat and Mr. Fox severally took first prizes. Mr. Mew was successful among the *Bantam* classes, which brought some good birds. The *varied class* was unusually good. Mrs. St. John, of Basingstoke, took both prizes. The *Ducks* and *Geese* were very good.

The Show was held in the Institution Hall, and we imagine the lesson conveyed by the Exhibition was neither the least useful nor the least instructive of the year. The Committee were indefatigable, and are richly entitled to our best thanks.

CREWE CENTRAL AMATEUR EXHIBITION OF POULTRY, PIGEONS, CANARIES, AND RABBITS.

THIS Show was held on the 3rd and 4th instant, in the Cheese Hall, at Crewe, in Cheshire. Judges of Poultry and Pigeons, Mr. J. Baily, Mount Street, Grosvenor Square, and E. Pargum, Esq., Sandbach; of Rabbits, Mr.

John Johnson, Sytch, Burslem; of Canaries, Mr. Poole, Hanley. The following were their awards:—

Prizes offered by Sir Philip de Malpas Grey Egerton, Bart., M.P.

WHITE DORKINGS (of any age).—First, Mr. G. Fell, Warrington. Second, S. Burn, East Terrace, Whitby, Yorkshire.

GESE (of any age).—First, J. Woolf, Esq., Haslington Hall, Cheshire. Second, the Right Hon. Lord Crewe, Crewe Hall, Cheshire.

SILVER CUP PRIZE, value £3 3s., to the best Pen of *Spanish Chickens*, Mr. G. Fell, Warrington.

LICENSED VICTUALLERS' SILVER CUP PRIZE, value £3 3s., for the best Pen of *Game*, of any variety.—Cup, Mr. R. Ashley, Wistaston, Cheshire. Highly Commended, Mr. J. Hough, Crewe Green, Cheshire; Mr. J. Killingley, Burton-on-Trent.

FIRST DIVISION.

SPANISH.—First, Mr. W. Pointon, Burslem, Staffordshire. Second, Mr. G. Fell, Warrington. Highly Commended, Mr. W. Pointon, Burslem, Staffordshire; J. K. Bartrum, Esq., Richmond Hill, Bath. Commended, Mr. F. Yates, Arclid, near Sandbach, Cheshire. *Chickens of 1856*.—First, Mr. G. Fell, Warrington. Second, Mr. D. Moore, Teddesley House, Walsall. Highly Commended, Mr. E. H. Strange, Ampthill, Beds; C. E. Coleridge, Esq., Eton College, Windsor; Mr. C. Nelson, Birmingham. Commended, W. Sergeant, Trent Vale, Stoke-on-Trent; Mr. J. Chappell, Burton-on-Trent; Mr. G. Harding, Crewe. (A very good class.)

DORKINGS (any colour).—First, Mr. J. Robinson, Vale House, near Garstang, Lancashire. Second, Mr. C. R. Titterton, Snow Hill, Birmingham. Highly Commended, E. Lister, Esq., Cassia Lodge, near Northwich, Cheshire; Mr. J. Chinn, Gas Street, Birmingham. *Chickens of 1856*.—First and Second, Mr. J. Dale, Hewson, Coton Hill, Stafford. Highly Commended, E. Lister, Esq., Cassia Lodge, Northwich, Cheshire; Mr. G. Kirkland, Southwell, Notts; Mr. T. Proston, Middlewich. Commended, Mr. J. Robinson, Vale House, near Garstang, Lancashire; Mr. W. Eudall, Henley-in-Arden, Warwickshire. (A very good class.)

COCHIN-CHINA (Cinnamon or Buff).—First, Mr. T. Hinks, Penkridge, Staffordshire. Second, Mr. H. Tomlinson, Balsall Heath, Birmingham. Commended, Mr. J. E. Wilson, Clifton Cottage, Claverley, near Bridge-north.

COCHIN-CHINA (any other colour).—First, Mr. H. Tomlinson, Balsall Heath, Birmingham. Second withheld.

BRAHMA POOTRA.—First, Mr. J. Lowe, Sandbach, Cheshire. Second, F. Manning, Esq., East Bergholt, Suffolk.

PHEASANT OR HAMBURGH (Golden-pencilled).—First, Mr. T. Hincks, Penkridge, Staffordshire. Second, D. Harrison, Esq., Singleton Park, near Kendal. Highly Commended, Mr. J. Whittington, Wooten Wawen, Henley-in-Arden, Warwickshire; Mr. R. Swift, Southwell, Notts.

PHEASANT OR HAMBURGH (Silver-pencilled).—First withheld. Second, Mr. J. Dixon, North Park, Horton, Bradford.

PHEASANT OR HAMBURGH (Golden-spangled).—First, J. K. Bartrum, Esq., Richmond Hill, Bath. Second, C. E. Coleridge, Esq., Eton College, Windsor.

PHEASANT OR HAMBURGH (Silver-spangled).—First, Mr. J. Dixon, North Park, Horton, Bradford. Second, J. K. Bartrum, Esq., Richmond Hill, Bath.

POLAND (Golden).—First, Mr. J. Dixon, North Park, Horton, Bradford. Second withheld. *Chickens of 1856*.—First, Mr. J. Dixon, North Park, Horton, Bradford. Second, Mr. E. H. Strange, Ampthill, Beds. Commended, Mr. E. W. Haslewood, Bridgenorth.

POLAND (Silver).—First, Mr. J. Dixon, North Park, Horton, Bradford. Second, Mr. E. W. Haslewood, Bridgenorth. Highly Commended, C. E. Coleridge, Esq., Eton College, Windsor. (A good class.) *Chickens of 1856*.—First, C. E. Coleridge, Esq., Eton College, Windsor. Second, Mr. J. Whittington, Wooten Wawen, Henley-in-Arden, Warwickshire. (A good class.)

POLAND (any other variety).—First, Mr. H. Churchill, Gloucester. Second withheld.

GAME (Black-breasted and other Reds).—First, Mr. J. Chinn, Gas Street, Birmingham. Second, Mr. E. W. Haslewood, Bridgenorth. *Chickens of 1856*.—First, Mr. W. Billinge, Wistaston, Cheshire. Second, Mr. E. H. Strange, Ampthill, Beds. Highly Commended, Mr. J. Killingley, Burton-upon-Trent.

GAME (any other variety).—First, Mr. W. R. Lane, Bristol Road, Birmingham. Second, Mr. H. Churchill, Gloucester. *Chickens of 1856*.—First, Rev. T. E. A. Bickerstaffe, Ormskirk. Second, Mr. H. Churchill, Gloucester.

ANY OTHER DISTINCT BREED.—First, R. B. Stewart, Swindon, Wilts. Second, Mr. J. Blackham, Handsworth, Birmingham. Highly Commended, Mr. H. Churchill, Gloucester (Negro or China Silk); Mr. J. H. Ferris, Conleton, Cheshire (Japanese Bantams).

BANTAMS (Gold-laced).—First, T. Hincks, Penkridge. Second, Right Hon. Earl Grosvenor, M.P., Calveley House.

BANTAMS (Silver-laced).—Prizes withheld.

BANTAMS (Black).—First withheld. Second, Mr. J. Phillips, Crewe, Cheshire.

BANTAMS (White).—First, Mr. J. J. Fox, Devizes, Wilts. Second, Mr. F. Yates, Arclid, near Sandbach, Cheshire.

CLASSES FOR SINGLE COCKS.

SPANISH.—Prize, J. R. Rodbard, Esq., Aldwick Court, Langford, Bristol.

DORKINGS.—Prize, Mr. J. E. Wilson, Clifton Cottage, Claverley, near Bridgenorth.

COCHIN-CHINA.—Prize, Mr. G. Frost, Crewe, Cheshire.

BRAHMA POOTRA.—Prize, Mr. H. Steele, Stoke Villa, Stoke-upon-Trent.

GAME.—Prize, Mr. R. Ashley, Wistaston, Cheshire.

DUCKS (Aylesbury).—First, Mr. T. W. Pearce, Bromham Road, Bedford. Second, E. Lister, Esq., Cassia Lodge, Northwich. Commended, Mr. F. Yates, Arclid, near Sandbach, Cheshire; Mr. E. Bowers, Nantwich, Cheshire; H. Akroyd, Esq., Doddington Hall, Nantwich. (A good class.)

DUCKS (Rouen).—First, Mr. T. W. Pearce, Bromham Road, Bedford. Second, Mr. B. Cotton, Crewe.

DUCKS (any other variety).—First, Mr. S. Burn, East Terrace, Whitby, Yorkshire (Black East Indian). Second, Mr. J. Choyce, jun., Harris Bridge, Atherstone (Buenos Ayres).

PIGEONS.

POWTERS.—First, Mr. F. A. Lavender, Biddenham, near Bedford. Second, Mr. C. Cotton, Crewe. Commended, Mr. J. Amos, Crewe, Cheshire; Mr. E. Eaton, Prestbury, near Macclesfield.

ALMOND TUMBLERS.—First, Mr. J. Percival, Harbourne, near Birmingham. Second, Mr. C. R. Titterton, Snow Hill, Birmingham. Highly Commended, Mr. J. W. Edge, Aston, New Town Row, Birmingham.

CARRIERS.—First, Mr. J. Percival, Harbourne, near Birmingham. Second, Mr. J. Choyce, jun., Harris Bridge, Atherstone.

BABBES.—First, Mr. C. Cotton, Crewe. Second, Mr. H. Child, jun., Sherbourne Road, Birmingham. Highly Commended, Mr. T. Belfield, Etruria, Staffordshire; Mr. J. Percival, Harbourne, near Birmingham; Mr. J. Chinn, Gas Street, Birmingham.

RUNTS.—First, Mr. J. Choyce, jun., Harris Bridge, Atherstone. Second, Mr. F. A. Lavender, Biddenham, Bedford.

FANTAILS.—First, Mr. H. Child, jun., Sherbourne Road, Birmingham. Second, Mr. F. A. Lavender, Biddenham, near Bedford. Commended, Mr. A. P. Pressdee, Belgrave Street, Birmingham; Mr. J. W. Edge, Aston, New Town Row, Birmingham.

TURBITS.—First, Mr. J. Choyce, jun., Harris Bridge, Atherstone. Second, Mr. A. Pressdee, Belgrave Street, Birmingham. Highly Commended, Mr. E. Eaton, Prestbury, near Macclesfield. Commended, Mr. J. Percival, Harbourne, near Birmingham.

TRUMPETERS.—First, Mr. C. Cotton, Crewe, Cheshire. Second, Mr. H. Child, jun., Sherbourne.

OWLS.—First, Mr. E. Eaton, Prestbury, near Macclesfield. Second, Master B. Cotton, Crewe, Cheshire. Highly Commended, Mr. R. Wilkinson, Crewe Green, Cheshire; Mr. C. R. Titterton, Snow Hill, Birmingham. Mr. J. Percival, Harbourne, near Birmingham.

DRAGONS.—First, Mr. H. Child, jun., Sherbourne Road, Birmingham. Second, Mr. J. Killingley, Burton-on-Trent.

TUMBLERS.—First, Mr. J. W. Edge, Aston, New Town Row, Birmingham. Second, Mr. E. Eaton, Prestbury, near Macclesfield.

BALDHEADS.—First, Mr. J. Percival, Harbourne, near Birmingham. Second, Mr. J. W. Edge, Aston, New Town Row, Birmingham. Highly Commended, Mr. G. Peak, Shavington, Cheshire.

CANARIES.

BELGIUM (Yellow, pure and clear).—Prizes withheld.

BELGIUM (Buff and clear).—Prizes withheld.

DUTCH (Yellow, pure and clear).—First, Mr. R. Beech, Burslem. Second, Mr. T. Lightfoot, Nantwich, Cheshire.

MOTTLED.—Prize, Mr. S. Dunn, Manchester Street, Crewe, Cheshire.

GOLDFINCH MULE.—First, Mrs. J. Grace, Crewe, Cheshire. Second, Mrs. F. Reay, Crewe, Cheshire.

SECOND DIVISION.

GOLDEN PHEASANT OR HAMBURGH.—First, Mr. W. Griffiths, Nantwich, Cheshire. Second withheld.

SILVER PHEASANT OR HAMBURGH.—First, Mr. H. Fitzsimons, Crewe. Second, Mr. T. Burgess, jun., Burley Dam, near Nantwich.

SPANISH.—First, Mr. P. Broad, Smallthorn, near Norton, Staffordshire. Second, Mr. J. Cheers, Green Bank, Cheshire. Highly Commended, Mr. B. Cotton, Crewe; Mr. J. Hobson, Hall Green, Cheshire. (A very meritorious class.)

POLANDS.—First withheld. Second, Mr. Burgess, Burley Dam, near Nantwich.

COCHINS (any colour).—First withheld. Second, Mr. J. Williams, Oak Farm, Crewe.

DORKINGS (Coloured).—First, Mrs. Leech, Crewe. Second, Mr. E. Bowers, Nantwich.

DORKINGS (White).—First, Mr. T. Wood, Minshall Vernon, Cheshire. Second, Mr. S. Pickering, Sutton Mills, Middlewich.

GAME (any age or colour).—First, Mr. G. Mountford, Betley, Staffordshire. Second, Mr. G. Lindop, Crewe.

TURKEYS.—First, Mr. C. Bowers, Nantwich, Cheshire. Second, Right Hon. Lord Crewe, Crewe Hall (Wild American).

GESE (Mottled and Grey).—First, Mr. J. J. Remer, Barthomley, Cheshire. Second, Mr. E. Bowers, Nantwich.

GESE (White).—First withheld. Second, Mr. T. Buckley, Occleston Green, Middlewich.

DUCKS (any breed).—First, Mr. J. Beech, Coppenhall. Second, Mr. E. Edwards, Surgeon, Crewe.

RABBITS.

FOR THE BEST LONG-EARED.—First, H. Child, jun., Sherbourne Road, Birmingham. Second, Mr. C. Cotton, Crewe, Cheshire.

ANY OTHER VARIETY.—First, Mr. C. Cotton, Crewe (Tortoiseshell Doe). Second, Mr. H. Child, jun., Sherbourne Road, Birmingham.

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Advertisements.

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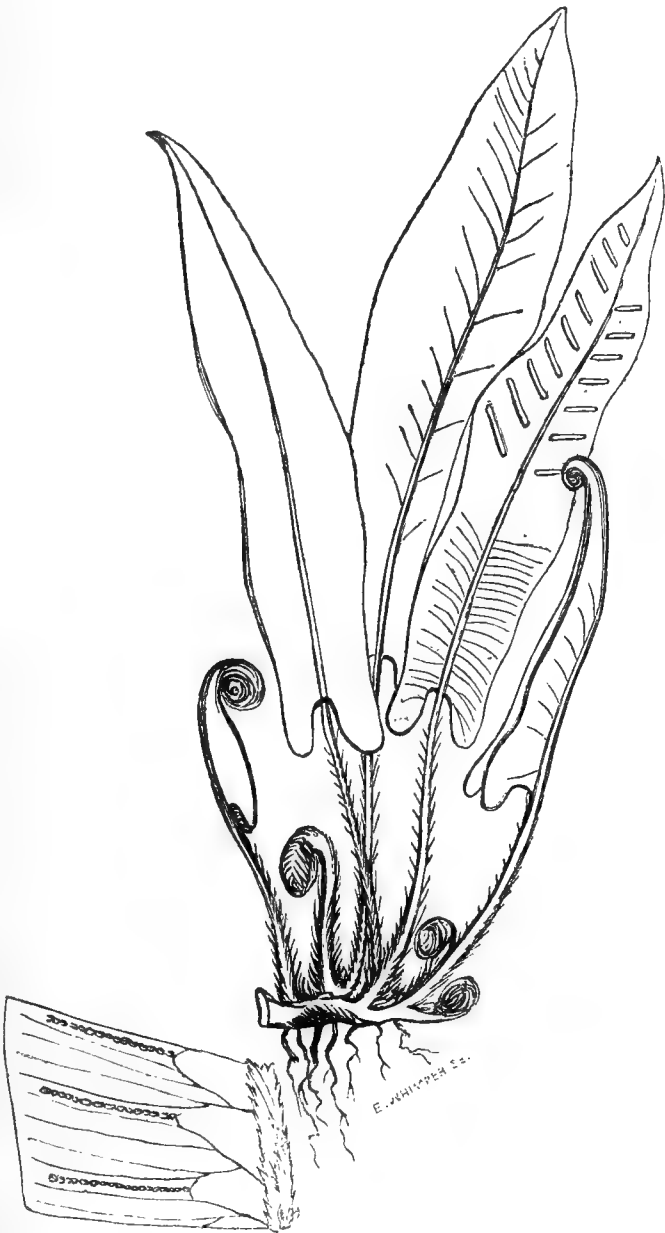
SUDBURY, SUFFOLK.

WEEKLY CALENDAR.

D M	D W	FEBRUARY 17-23, 1857.	WEATHER NEAR LONDON IN 1856.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
17	Tu	Sun's declinat., 10° 28' s. SHROVE SUNDAY.	29.843-29.831	43-34	E.	—	12 a. 7	17 a. 5	2 10	☾	14 15	48
18	W		29.762-29.707	36-32	E.	01	10	18	3 24	24	14 10	49
19	Th		29.867-29.753	42-32	N.E.	—	8	20	4 32	25	14 5	50
20	F		29.908-29.841	38-32	N.E.	—	6	22	5 28	26	13 58	51
21	S		30.054-29.916	37-28	N.E.	01	4	24	6 9	27	13 51	52
22	Sun		30.074-29.976	43-27	N.W.	01	2	26	6 39	28	13 44	53
23	M		30.299-30.017	50-27	N.	—	0	27	7 1	29	13 35	54

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 45.5°, and 31.6°, respectively. The greatest heat, 58°, occurred on the 23rd, in 1846; and the lowest cold, 2°, on the 17th, in 1855. During the period 106 days were fine, and on 90 rain fell.

SCOLOPE'NDRIUM VULGA'RE.



THIS is the *Asplenium scolopendrium* of Linnæus, and the *Scolopendrium officinalis*, *S. phyllitis*, *Phyllitis vulgaris*, and *P. scolopendrium* of some other botanists. It is the *Common Hart's Tongue Fern* of English herbalists.

Root compact, penetrating deeply, tufted, slowly spreading by forming offsets round the crown. Fronds numerous, usually from six to eighteen inches high; but Mr. C. Johnson found specimens in the open vault near the great hall of Conway Castle four feet long, and nearly four inches broad. Stem one-third without any leafy development, and this unleafed part is dark

purple-coloured, and shaggy, with narrow, brown, membranous scales; but sometimes it is smooth. The general outline of the leafy portion is long, narrow, heart-shaped, and pointed, smooth, entire at the edge, but somewhat wavy, bright grass green. The leafed portion of the stem is also covered with scales, but they are smaller; it puts forth on each side a regular series of three-branched veins, each branch being two-forked, and where the outer forks almost join the outer forks from the next veins there is apparently a single line of fructification throughout their length, but each of these adjoining forks produces fructification, and the masses run together. The fructification occurs only about the upper part of the frond, and is composed of numerous small brown capsules, which rise up through a pale brown, membranous cover, which folds over them in their early growth, but in their state of ripeness remains nearly erect on each side.

There are eight forms into which the fronds pass, but they so frequently occur with the fronds of the usual form that they can scarcely be considered varieties.

1. *Polyschides* has a scolloped, finely-plaited edge.
2. *Crispum* has the edge very wavy and curled.
3. *Marginatum*, with the edge double, or, as it were, with a hem.
4. *Hastatum*, with a pair of spreading lobes at the base.
5. *Lobatum*, or rather, *furcatum*, for the point of the frond is divided into two irregular ends.
6. *Multifidum*, or many-cleft at the point.
7. *Laceratum*, torn, the whole frond, both at the edges and point, being deeply cut.
8. *Ramosum*, branched, the stem divided in two, and the points of the twin fronds much lobed and crisped.

The *Hart's Tongue* is one of the commonest of our Ferns, and is to be found almost in every county of the British Islands.

It was known to Turner, Gerarde, Ray, and other ancient herbalists as *Phyllitis*, and even the *lobatum* variety is described and depicted by Gerarde under the name of *Phyllitis multifida*. He says he found it "in the garden of Master Cranwich, a chirurgion dwelling at Much-Dunmow, in Essex," "who," he adds, "gave me a plant for my garden."

This Fern looks noble by itself, and also forms a very striking object when grown in a collection of pot plants, or on a rockery, from neither of which it should be absent. It is easily established. It is very distinct from all other British Ferns, and it is, moreover, a plant that will take its place on any part of the Fernery

or rockwork, being not so particular as many other Ferns. But, although it bears exposure as well as any of our native species, still greater luxuriance may be obtained by placing it in deep, shady places. It is remarkably well adapted for planting about the shrubbery, wilderness, and such-like places, in clumps accompanied with masses of rock, stone, &c. This and *Lastræa filix mas* look extremely well together in such clumps. Two parts loam, with one part each of leaf mould and peat, will form a suitable compost, with the addition of sand and some finely-broken sandstone, broken pots, or a little old mortar. This Fern requires potting or planting rather firmly, a good drainage, and a moderate supply of water. It will bear any temperature from the severest winter frosts to the temperature of a stove, in which it thrives remarkably well. It may be propagated by division or by seed, in the same way as directed for former species.

RETARDING AND PROTECTING FRUIT BLOSSOMS.

It is now some years since I first had the pleasure of drawing the attention of fruit growers, through the medium of THE COTTAGE GARDENER and otherwise, to the propriety of a thorough recognition of the principles of retardation and protection. Without undergoing the charge of egotism, I venture to claim the honour of being the first to take a stand on such matters as principles. I remember, also, the same with regard to *root pruning*. About twenty-eight years since the public was cautioned not to be led astray by Mr. Errington's extravagant ideas of root pruning, and now some of our first fruitists boldly recommend annual root pruning! However the protection principle may be still disputed by some, the majority of our best gardeners are unquestionably in its favour; and as spring comes round I think it well to freshen up the minds of the readers of THE COTTAGE GARDENER. This widely-circulated work has been the means, probably, of disseminating more sound, practical views of gardening than any other extant; but as good wine needs no bush I will pass on.

If ever there was a spring when, according to my notions, *retardation* was necessary, it is the one we are now commencing. After one of the most severe winters on record—severe as to its duration, the intensity of its cold, and its fluctuations—the bud, should a mild period intervene, will be in a most excitable condition, and must by all means be kept back.

If any man doubts the principles of retardation still, let him consider what the effects would be if the blossoms of fruit trees were to expand a month or more earlier than they do. That they expand just when they do is all very well, but it happens to be so as we must record it. However, to pass on, let me advise all about to do these things to reconsider the principles, and not to lay the faults of their misconceptions on those who performed their plans with precision, backed by sound evidence.

In the first place, I advise that coverings be applied both for retardation and protection if possible, odd as it may appear. The first use of such covers is, of course, retardation; and here my advice is, chill the trees all you can. As for fuming about the consequences, what nonsense! If a fruit tree in blossom can bear six or eight degrees of frost, and set fruit, pray how much shall we not allow a tree with the buds just on the move? So let us have no fear about

cold frosty winds starving the stems, and all such nonsense. It is, doubtless, the fear of the latter which has induced people to coddle their trees, and thus they have got the retardation and protection principles muddled and confounded. To be sure they run into each other; but what does that prove but that a nicer discrimination becomes necessary at the transition point? To accomplish the retardation it is but necessary to ward off sunshine, and to encourage low temperatures.

As to *protection*, all I can say is, that attention is one of the chief requisites. As for wisps of straw, boughs, &c., they are all very well. People will have cheap things; but as well might they expect a donkey to do the work of a horse. Some will have an orchard-house, thinking it by no means a too expensive luxury; others get fancy framework before their trees, and thus go half way; and each and all of them, in explaining their views on paper, set forth how very cheaply the thing was done; so all these good folks may be said to live in Cheapside; but if luxuries must be carried by cheapness they will be few and far between.

Speaking of protective plans, it may be observed that all possible means must be taken not to coddle the blossoms. Here, again, the dread of cold winds is by far too much encouraged. Blossoms will endure more cold winds than is commonly imagined; indeed, I question much if such cause damage, unless frosty to the amount of four or five degrees. Therefore, under what I call a protection system, I would still keep the blossoms as hardy as possible. Of course all available sunlight should be obtained, especially very early in the morning; on the latter I lay the utmost stress, for, whatever covering be used, I would make a point of covering the trees soon after three o'clock whenever sunshine occurred, in order to shut in solar heat.

Here it is that moveable coverings by far excel those of a fixed character; indeed, what gardener would dream of the latter unless compelled by what is termed economy?

After all, of what use is it to protect blossoms imperfect in their formation? But who will believe that theirs are imperfect? Tell any man who begins to complain of coverings not securing a crop of fruit that his wood was neglected and badly ripened, and the chances are that you get a rude reply for your temerity. However, I by no means charge gardeners in general with wilful neglect. The fact is, there is such a pressure in these times on the brains of the gardener, through a vast multiplication of objects, and the increased and increasing desires of those who are warm in gardening matters, that few can find labour enough in the busy season to catch every little thing in its turn. But it is certain that since one labourer will do but one labourer's work, if we continue to multiply desires we should make the labour question keep pace with them, or something will assuredly go to the wall.

As to the ripening of the wood of tender fruits, I will boldly affirm that, with the exception of a few southern counties, there is not thirty per cent. of the trees done justice to in this respect, whatever people may aver. It is not merely the sunlight shining on the general exterior of a fruit tree; it must penetrate the gloom, and cast its rays on those spurs or buds which should constitute the future crop. As I have before urged, even the coarse orchard Apple tree, hardier than an Oak, is in some degree amenable to those conditions: how much more so, then, our Apricots, Peaches, Plums, and delicate Pears, which affect warmer and brighter skies than our own! But the thing is almost self-evident, and would seem to require little argument—only a solid consideration by men of experience.

R. ERRINGTON.

SPRING PROPAGATION.

PARLIAMENT meets so regularly in these days that we might fix on the time as a marked day in our calendar; thus, when you hear that the Minister has sent to his party to be at their post, you should send to the stable yard, and order so much good fresh dung to be got ready by the 3rd or 4th of February as will make a substantial hotbed to raise seeds and strike cuttings in, and then make a motion, or rather, pass a resolution unanimously, that that bed will do more real work in half a session than the Parliament can do till the Dog-days.

I know nothing in gardening which is more likely to be universally remembered than the right time to make up a propagating bed in the spring, if we couple it thus with the meeting of Parliament; and if it can be got into working order by the middle of February, why it is as much as they can do in Parliament, and as much as any one need wish to do who has a good deal to learn yet on the subject, while those who are merely beginning to understand the mysteries of propagation will be in full time if their propagating beds are fit to begin with by the 10th of March, so that this annual article on early propagation comes in just in time to "cut both ways" this season.

Now, suppose there are ten thousand places in which a hotbed of this kind is to be made up for the first, second, or third time, there are just ten thousand chances to three that, with all our writings, there is only one-third of the number who can make a hotbed to be the "real thing." Without *supposing* anything, it is quite certain that one-third of the beds will be made *too green*, that is, the dung will not be one-half mixed as it ought to be, nor up nearly to the right pitch of heat, neither will there be enough of it. That kind of economy called penny wise and pound foolish will be sure to sway so many out of a thousand, and quite right too. There would be no use for books if all could learn at one jump. Another third of the number will make up their beds with the dung so hot, that it is actually on the point of taking fire—spontaneous combustion as they call it. Then the first third will have two-thirds of their cuttings, and all their little seedlings, if they appear, fogged or damped off before the "heat is up." They then take out pots and all, and give a stir to the dung as deep as a dung fork will reach, level, pat down, put on the surfacing material, and in with the pots again. Another sulk of the bed intervenes, and after that a heat sufficient to destroy all life and property within the four corners of the frame, and between them all a season is as much as lost; but a great deal is learned—more than any one might think.

Those who make or made their beds with the dung at its hottest pitch suffer in just a contrary way: the bed is so hot that nothing can be put into it for awhile, and the stench from it is insufferable, from a process which has never yet been explained; I mean the process of converting ammonia, or rather, the dung, which is highly charged with ammonia, into charcoal, or something like it. In turning the surface of such a bed you soon come to the long dung, and find it dry enough to light a fire with, and half way between blue and white, from the intense heat and the confinement of the bad smell, which is the same thing as ammonia. Now, some do one thing, and some another thing, with the bed in this condition; but all the doing on earth will never make a good bed out of it without first taking it to pieces, and shaking the freshest of it up with more fresh dung from the stables; but let us follow them. One forks it up, and pours a quantity of water on it; another, after shaking it up, puts an extra coat of tan, or sawdust, or sifted coal ashes over it, and goes at it again, and for a week all seems right enough; but, as soon as the violent heat is over, the heat declines so fast that nothing will grow kindly in it. Then linings are applied; after that comes heat by

fits and starts, so that one does not know for two days running how to manage about giving air; but a lining to a thorough-made bed is the life and soul of it all through the season, provided that some dry litter is kept constantly over the lining, so as to keep down the rank steam, and care is taken that the bad smell from it does not get inside the frame; for if it does good-bye to all that is then inside.

A man who has been in the habit of making hotbeds for Cucumbers and Melons only is as likely to go wrong on one of the essential points of a cutting bed as the man who is beginning his first bed, and that point is the degree of heat. They make Cucumber beds very hot early in the season. The way they manage that is, after turning and shaking the dung so thoroughly that not a lump of droppings, or even hardly three straws hold together, the bad smell gets off so fast that they can put up the bed before the dung is half up to the heat it would come to. Now, the secret for making a cutting bed is to have the dung as thoroughly mixed and divided as for Cucumbers, and then to turn it twice more after an interval of three days each time. The object is to get the heat of the dung "on the decline," and to use more of it than for Cucumbers, to make up for the difference of heat. Of course a good gardener can so manage as to make any kind of bed do; but I am confident that cutting beds must be made on a different plan from a Cucumber bed; it must be a deeper bed, a wider bed, and a bed not nearly so hot at first as for Cucumbers. From 60° to 70° or 75° is hot enough for cuttings, unless one is very expert at them; then you may go up to 90° and welcome, but 60° in the morning is a good pitch for a new beginner for the first season.

A one-light box should have the bed four feet deep at the back, and six inches wider than the box all round. A two-light box will not require so deep a bed, unless it is very early in the season; but I must confess my own partiality to deep beds; then the dung may be worked till it is as "sweet" as going into a well-regulated stable. For a three-light box the rule is three feet at the back; but I would just put six inches more on it if I had the chance, and they would be with hardly any straw, only one-half spent litter or droppings, and one-half old or dry rough tan, or, if I could not find tan, I would use cinder ashes, not very fine or too coarse, just middling. That is another grand secret for cuttings; and a third secret is never to give so much water to anything in the cutting bed as to run the water to waste, and so chill the bed.

Most kinds of seeds which are sown in cutting beds will do well enough without the pots being plunged, except just to get bottom hold *on the slope* of the bed; but all cuttings for the flower garden do better from the pots being plunged to the rim, and sifted coal ashes are the best thing, or at least the safest, to plunge such cuttings in. White sand is excellent for plunging in, but few can get it. Three inches is the right depth for plunging in, because 60-sized pots are the best size to learn to grow cuttings in; or, if 48-pots are used, three inches will be sufficient, as their bottoms can go a little into the bed, or they need not be plunged so deep; indeed, 48-pots need not be plunged more than half their depth. In many of the propagating houses the top heat is often more than the bottom heat *at the bottom of the pots*; but even in that case 60-sized pots ought to be plunged to the rim, and the reason is that they require so much less water when plunged; and the less water a soft cutting gets, or rather, the more it does without, the better it is for it.

Some of these points I only learned this time last year, when we were striking for the "Experimental," and ten years ago I should have been the first to pooh, pooh at so much bother all about nothing, as one might say, but which is yet all in all to the greatest number.

That kind of hotbed called the "Waltonian case" requires some slight alterations in its management from that for a hotbed; and after I notice them the rest of my instructions go to both bed and case alike. There is only one coat of pure white sand, about one inch deep, between the hot-water bottom heat in the case and the bottom of the cutting or seed pots, and that inch of sand must be kept constantly moist, in order to make the best of the heat. If the layer of sand is allowed to get dry, or partially dry, the heat will not rise freely through it, and a greater bottom heat than is necessary must be maintained to make up the difference, and the pots must be watered more often than would be necessary in a moist bed. Even with a well-regulated Waltonian case, the pots being not plunged, they will get dry much sooner than they would in a dung bed. Then, to prevent damping, the heat for a Waltonian case ought to be higher than for a dung bed, and 70° should be held as the lowest point in the morning, with a rise to 80° and 85° on a fine day; but when the sun does not shine from 70° to 75° are quite enough for the cuttings. As a Waltonian case is worked in-doors, a little air on it day and night will not affect the heat much; that is, the expense of keeping up to a certain degree of heat will not affect the bill of costs much, and the cuttings and seedlings will be all the better for it, as, with the smallness of the space inclosed, the air would soon get too much confined, and would be apt to cause damp; for we must never lose sight of the great fact that damp is the greatest enemy which cuttings and young seedlings have to contend against. The tops of Waltonian cases are as moveable as the lights of a pit, and they are sure to be as wet in the morning as the lights on a dung bed; but that is just the beauty of the contrivance, only that we must balance between "sweet, moist, wholesome air," and air so loaded with moisture and confined as to create damp among the leaves. Instead of wiping the glass dry, however, I would simply turn the lights or tops of a Waltonian case inside out for a few hours in the morning. I would also keep the sand under the pots more damp than would probably be safe for many amateurs to do, and would get rid of the extra moisture by more ventilation. Some of the pots in the centre over where the lamp plays in very cold weather soon get dry, and so will the sand; therefore that part needs looking after more closely; and in dull weather it is best to take out such pots to water them, and to allow them to drain before they are returned into the case. By that means no more water gets to the sand than one sees necessary; but in hot, dry, sunny weather all the pots might drain into the sand without any hurt.

When seedlings come up in a hotbed or in a Waltonian case, if the place is too hot for them, or too much confined, they show it in the same way in both; that is, by having the tiny stems below the seed leaves whitish or pale, and much longer than the rest, for which the place is only warm enough. As soon as that is perceived the pots must be removed to a cooler place; and here is where the greatest danger lies—"to a cooler place." But what kind of place will they be safe in till they are so hardened as to take care of themselves as it were? In a greenhouse is the best place to work a Waltonian case, but they have them now in the drawing-rooms; and, where no greenhouse is at hand, nothing is more handy to remove such seedlings into, as they cannot bear the heat of the case, than some clean common garden pots, of such sizes as will hold the seed pots and seedlings, with a pane of glass over the mouth of the pots for a few days. Mr. Walton himself uses a cold case close by the side of his working case, with glass lids or large panes of glass; but then he has a capital greenhouse for them, and Mrs. Walton is always at hand, and what a lady takes in hand is sure to do well. But, really, you cannot expect to see silk dresses and

all that sort of thing in the framing-ground among hotbeds and litter, although, where a regular gardener is not kept, I would a thousand times rather leave the directions about a cutting bed in the hands of a lady. You will hardly find a man out of fifty, or outside the War Office, who can give explicit directions about any one thing with which he is not conversant; whereas nothing comes amiss that way, from the cookery book to *THE COTTAGE GARDENER*, to most ladies in the present day. Besides, the "governor" may say what he likes, but what the "missus" says is the law among gardeners, high or low.

I put the following down as among the first things to sow in a Waltonian case on a limited scale. *Cobæa scandens* for an out-door summer climber, and not bad to manage. *Delphinium Sinense* to raise early seedlings, which will "blow" early, and ripen more seeds to make the best blue bed we can have; very easy to do, but probably they must not be left long in great heat. *Ipomæa limbata*, a most charming climber; but whether or not it will bloom out of doors is hard to say, but it must be planted out by the end of June. Several best mixed kinds of *Ipomæa purpurea*, or the old *Convolvulus major*, to be sown on the 1st of April. *Lobelia*, several kinds of; none do better in bed or case. *Lupinus mutabilis*, being a smoother name than *L. Cruikshankii*, without much difference in the looks; very easy indeed to manage, and to have ready to plant out in May. *Hibiscus Africanus*, not bad to do, and will bloom in mixed borders till the frost comes; has nearly white flowers, black-eyed Susan fashion, with large dark centres or eyes. *Mesembryanthemum tricolor*, not bad to do, but must be most tenderly handled, as they are so delicate; they flower best in shallow pans in-doors, and are most beautiful flowers. *Petunia*, mixed seeds. It is a good plan to raise a packet of them every spring; they never come amiss along the borders, besides the chance of something good for the pots. *Phlox Drummondii* ditto. *Portulacca*, mixed, another charming race to keep up the gaiety of one's place for a mere song. *Salpiglossis*, mixed seeds for mixed borders, and few better deserve them. *Tigridia pavonia*, and why not, if it is the grandest flower of September? We are all grand in the flower way. This will come up like Oats or young Crocuses; and *Viscaria oculata*, to get it very early in-doors, to help after the Pelargoniums are getting seedy.

The rule for sowing seeds in pots is as straight as Rule Britannia. Give good drainage. All flower-garden seeds, without a single exception, if you keep from "American plants," will grow in one kind of compost, and the half of it should be sand, and the rest of peat or leaf mould, either will do, and any light loam which is nearest at hand. All the talk about this and that particular soil for seedlings is just as much fine talk, and nothing more. *Lupin* is one of the largest seeds for a flower garden, and should be covered just one quarter of an inch, and, of course, none should be deeper. The *Lobelia* is the smallest, or one of the smallest, and all that class are never sown by people with brains till the pot is first well watered and drained; then sow as thinly as you can, and with the finger and thumb sprinkle fine soil or a little sand over them, just as you would salt a sandwich. All other seeds cover according to their size and this beginning.

D. BEATON.

THINGS TO BE THOUGHT ABOUT.

"WELL, now, did you ever know of such a winter?" is a question that meets me at every turn. We are but too apt to imagine that the present period is strangely distinguished from all others. There is little harm in

coming to such generalising conclusions, if we do not make the *season* the great scape-goat for carrying away out of sight and out of mind our own errors and shortcomings. A failure is not an unmitigated evil when we have sense enough to use it as the sign-post and the preventive of future danger. Experience may thus be a harsh schoolmaster; but, once possessed of the benefits of instruction, we look back very pleasantly upon the severe floggings. Failures with many never become experience, because, never suspecting anything in their own practice, they complacently lay the blame of all unpleasant results upon something or other wholly beyond their control; and among these somethings, with our gardening friends, what more serviceable than the changeableness of the season?

WINDOW PLANTS.—There is "MARY ANNE" more wroth with the season than ever I should have supposed her gentle nature could be wroth with anything. Her plants in her parlour window were worthy of her care. I daresay she never knew that people noticed them. Even if she had she could not have treated them better, for she loved them for their own sake. Others have noticed that even heavy, earthy, cool, calculating folks, with no appreciations but for the materially useful, and who would stretch themselves into an inch or two of additional importance as they told you they held the views of the great Dr. Johnson, and of all flowers in the garden preferred the Cauliflower—even they would lag, and take slower and shorter steps as they passed our favourite's window—the uprisings of the natural sense of the beautiful triumphing for the moment over their leaden, utilitarian philosophy. And there were others of a more kindred spirit, and with all the buoyant feelings of youthdom, who, but for shame, would have stood and gazed upon the plants until, by a natural transition, they would get into dream-land about what sort of a little, trim, neat, orderly fairy it could be that thus marked the strong features of her own character on the beautiful plants before them. Alas! the plants are no longer in the window—their leaves have been frost-bitten, and must be hospitalized for a time, if ever they regain their former freshness. We quite feel for the mishap, and we sympathise with Mary Anne in everything except her repining and fretting about the extreme and sudden changes of the weather as the cause of the misfortune. The weather, it is true, had been somewhat regular for a few days, the temperature ranging at night from 38° to 43°, and the plants were quite safe. Mary Anne goes from home for a night, *gives no directions about the plants to meet contingencies*, and in the morning the pots are firm in their saucers, with a thermometer outside the window at 23°. Had the plants been moved at bedtime to the farther side of the row not a leaf would have been touched. I must say that the variations in weather and temperature have been more than ordinarily sudden and extreme; but these variations it is useless to blame, because we cannot influence them, though we have it in our power, to a great extent, to moderate and neutralise their effects.

KEEPING GREENHOUSES SAFELY AND ECONOMICALLY.—“MISS AGNES CAREFUL” has got into some trouble. A number of her plants, close to the front of the house, got frosted the other night. She takes the whole responsibility of giving directions as to firing, &c., uses the house chiefly for preserving bedding plants in winter, and, alike for their benefit and the saving of fuel, never makes a fire except when absolutely necessary, and just to keep the frost out. “The day before the mischief was done was dull and drizzly—temperature out of doors about 38°, and a few degrees warmer in the house. During the evening the sky became clear and the stars beautifully bright, the wind, what little there was, veering from east to north; but still by bedtime the thermometer out of doors had not come to 33°, and safety was therefore pre-

dicted. Are not these rapid changes worrying? At eight in the morning the outside thermometer was 24°, and the inside a little below 30°, and the plants near the glass, and those that were particularly moist, suffered, while those that were drier and farthest from the glass escaped. That teasing Mr. Edwards says it is no use blaming the season or its changes, and I think it is too bad after all the trouble and care I have taken.” Well, I think so too, and if you ever give me the chance I will not hesitate to give Mr. Edwards a bit of my mind on that subject. There is nothing very magnanimous in twitting you as the cause of your disappointment. It would have been more manly in him to have mollified it down, and, if he could have done nothing more, to have cheered you with bright visions of future success. We should have had no patience with him if you had at all blamed yourself in the affair, because a felt want or seen deficiency is such a sure passport to future superiority. If you had honourably confessed at once to any shortcoming on your part, I should consider it very ill-natured in Mr. Edwards to do anything but kindly sympathise with you. But are you quite sure that you did not throw rather too much blame on the weather, and too little on your want of forethought? In either case you may easily be up hands with Mr. Edwards, and that is to set him to make a brisk little fire whenever the thermometer in the evening gets to 35° and the stars are shining brightly. Who knows but that he would be so pleased to do that or anything else about which you expressed a wish, that he would never breathe a word about a mischance for the future? In general circumstances a briskish fire would heat the house a little before the frost had obtained admission, and less fire will do if the heat begins to act upon the house before its temperature is greatly lowered. With such symptoms it is always desirable to light a small brisk fire. Before bedtime you will be able to decide whether to put a little more on or allow it to go out. It is impossible to combine at the same time the extreme of the economical and the extreme as respects safety, if we mean to have many hours' sleep at a time in cold, changeable weather. For instance, from six to eight it suddenly becomes cold and frosty, and as the sky is clear, encouraging the free radiation of heat from everything exposed to it, we light a brisk fire, though the house be a degree or two above 40°; from nine o'clock the sky becomes as suddenly cloudy, and could we have predicted that, and still further predicted the continuance of the clouds, it is very probable no fire would have been lighted. But, supposing we had lighted no fire, and were priding ourselves on our prudential foresight in finding the house quite safe, and such a canopy of clouds, likely to last till morning, that there could be little more cold from radiation of heat, but that, nevertheless, these clouds passed away as suddenly as they came while we slept, and Jack Frost seized on our best favourites, where would be our boasted economy and foresight then? The one brisk fire sufficient to heat the heating medium would, in such a case, have insured safety, have enabled us to sleep without distracting care about our tender *protégés*, and even if the morning was much warmer than the evening, would not be lost, but be useful for drying the house, promoting a draught or circulation of air in it, and if the day was at all fine, permitting of opening the ventilators more.

For all such low-temperated houses a constant fire will never be wanted unless in continued severe frosts, and seldom even then unless the houses are of large size. Sharp, sudden frosts are the most dangerous, and therefore, whatever the mode of heating—flues, hot water, cast metal, or zinc pipes, &c.—it is important that the heat be quickly communicated. Large thick flues, and large pipes containing much water, are all well enough where less or more of continuous heat is required, because,

though it takes long to heat them, they keep heat a long time; but cool greenhouses should be capable of being quickly heated to meet sudden extremes. In such a house, supplied with large, deep, narrow pipes for hot water, I have found it economical to work the pipes when even less than half full. Every one will perceive, other things being equal, that twenty gallons of water are heated more quickly than forty or sixty gallons. This should be kept in mind by those who resolve on using the tank system, for four or six inches in depth is as good, nay, much better, than twelve inches.

Although I have thus spoken of these brisk fires to meet a sudden emergency, let it be clearly understood that for all greenhouses and conservatories expected to be gay and blooming in winter a little heat frequently, unless in very mild, sunny days, will always do the plants good, just because a circulation of air will be promoted, and more fresh air may be admitted. In such a house, even when the thermometer out of doors was seldom below 40°, I would often have a little fire, just to warm the heating medium, from November to March—that often being turned into as seldom as possible, just on account of the expense of the fuel consumed. In all temporary cases, and, indeed, in all, *brisk* fires, with a proper control of the dampers, are the most economical. Banked-up, smouldering fires are capital things for heating the chimney and the stock holes. For such a blooming winter conservatory its average temperature should seldom be below 45°, unless in very extreme weather, when it is better to sink 5° or 7° in preference to using a very great amount of fire heat.

FROZEN PLANTS.—“MARIA” got her plants slightly frosted, and must make the misfortune double by cleverly sousing them with warm water. The result may be anticipated. The wisest will make mistakes. Nevertheless this can hardly be the Maria, an old friend of ours, who so mercilessly exposed the shortcomings of many of the elegant sisterhood in housekeeping affairs, winding up the humorous lecture with the appeal made to her by a bright-eyed young wife, to show her how to sew the dough-paste round an apple to make a dumpling for her husband's dinner. Ah, Maria! that was not at all a pretty thing of you, breaking confidence, especially when your young sister sought your help so humbly and yet so earnestly. Do not think for a moment that when we smiled our approbation it was to your taking down the young thing and her dumpling; for any one could see that time and opportunity only were wanted to make her clever enough. No; we smiled in approbation of the humorous description of the strong-minded, confident woman who, in defiance of warning and remonstrance, thrust the Scotch Kale, nearly as hard with frost as iron, into the boiling water, and then in bravado, and a determination that scorned even an approach to the yielding point, ate heartily of them herself when nobody else would touch them. Had *our* Maria seen those greens she would not have used warm water for her frosted plants. If tender plants are frosted severely nothing will restore them; but if only slightly affected they will suffer but little if thawed very gradually, and they are kept close and dark, or shaded until they are all right, and even then not placed in the sun for some time afterwards. The cooler the place for such plants, if a little above freezing point, the better it will be for them. I have known hundreds of plants in cold pits and frames destroyed by uncovering as soon as the frost was gone, which most likely would have been all right if the covering had remained on a day or two longer, and then a slight shade given for a day or two if the weather was very bright. I have had pits and frames covered for a month in severe weather, and notwithstanding mats, litter, and, best of all, a fair coat of snow, the frost had several times just got in a little; but, by using the above precautions as to uncovering, there was hardly a

trace of the storm left. A correspondent last season, who had his plants slightly touched, removed them at once, before the sun got up, to a cold cellar, and in a few days they were as nice as ever. As soon as he got them in the cellar he sprinkled them gently with cold snow water. I hope in such circumstances our Marias will use, in future, cold instead of warm water if they use any at all. It will be best to guard against the necessity.

R. FISH.

FORCING AND BLANCHING SEA-KALE.

THIS delicate vegetable is as much in request as any now grown. It is exceedingly useful to the gardener, especially in severe winters, when such vegetables as Broccoli and greens are either destroyed or rendered so scarce as not to give a daily supply. Sea-kale may be forced in various ways. The most common is to cover the plants when at rest with what are called Sea-kale pots. They are made of the same material as the common garden pot, generally about fifteen inches deep and nine inches in diameter at the base, gradually tapering upwards fifteen inches to six inches broad at the top, on which is placed a tightish-fitting lid. The plants are generally so planted that three can be covered with one pot, and the bed is so broad as to allow of three rows of pots. These beds, if a succession is desired, are of such a length as to afford a supply for three weeks or a month, and as many beds are cultivated as will supply a family for the season, that is to say, from the end of December to the end of May. As soon as the first bed is determined to be forced all the old leaves are cleared off, the soil is gently forked over, the pots are then placed over the crowns, and as much well-tempered stable litter or leaves is laid among and over the pots as will afford a gentle heat. In about a month or five weeks, if all has gone on right, the Kale will be ready for use. The rest of the beds are covered in succession, so as to insure a constant supply.

This method, to say the least of it, is cumbrous and expensive. The pots cost from 2s. 6d. to 3s. 6d. each, and are very liable to be broken with the fork. The dung, too, often becomes too hot, and then scalds the Kale; therefore many gardeners now adopt the plan of growing the Kale roots in sufficient quantity so as to allow them to be taken up in batches in succession, and either put into pots and covered with others to blanch the Kale, and place them in a warm situation to force, or, which is better, put the roots thickly on a dung bed covered with a frame, the roots planted in sand or soil, and the frame thickly covered with mats or straw to exclude the light, in order to blanch the shoots.

Some place the roots in a Mushroom house, the heat of which is just right to force this vegetable into growth.

The objections to this method are the large extent of ground necessary to supply Kale during the season even for a moderate family, and also the destruction of so many good plants, that would bring finer Kale for several years after.

A third plan is to cover the bed with wattling, and covering that thick enough with dung to heat the interior, and thus bring the Kale into growth. This plan requires an immense amount of dung and labour, and, besides, the Kale is extremely difficult to get at to gather it. It also has the disadvantage of causing the vegetable to spread out its leaves, instead of growing in that compact form the cook delights in. I think, also, the rank steam gives the vegetable a disagreeable flavour. In the first and last plan there is another objection, and that is, the roots are not in action sufficiently vigorously to cause the shoots to come up strong. The soil should be of a moderate temperature to a considerable depth. Some gardeners, and amongst them a writer in THE COTTAGE GARDENERS' DICTIONARY, in order to over-

come this difficulty, dig a trench on each side of the bed, and fill that trench with hot dung, placing a frame covered with glass over the plants. This is not a bad plan, but expensive; the frames cost a considerable sum, and the glass is liable to be broken, though, to remedy that, broad boards might be substituted for the glass. If they fitted tight the light would be excluded, especially with the additional covering of a mat. This method is also troublesome,—the wheeling out the soil and the number of frames requisite for a moderate supply, the placing them on and shifting from time to time to force different sections of the bed, to insure a supply for a whole season, would be such an amount of labour that the Kale would hardly repay it.

I was once gardener at a place in the north, and the family requiring a considerable quantity of both Sea-kale and Asparagus, and, besides that, each of these vegetables, when forced with dung, being thought by the lady to have a flavour of it, I, in consequence, determined to try a plan that I thought would obviate all the above-mentioned disadvantages, besides having a much cleaner appearance.

	<i>c</i>	<i>c</i>	<i>c</i>	<i>c</i>	<i>c</i>	<i>c</i>	
<i>Ground</i>	<i>a</i>	<i>b</i>	<i>a</i>	<i>b</i>	<i>a</i>		<i>Level.</i>
	Dung 2 feet	Plants 2 feet	Dung 2 feet	Plants 2 feet	Dung 2 feet		

SECTION OF A FORCING SEA-KALE BED.

d	d	c
2 feet	Dung.	a
2 feet	Bed for	plants. b
2 feet	Dung.	a
2 feet	Bed for	plants. b
2 feet	Dung.	a
2 feet		c

GROUND PLAN.—SEA-KALE BED.

In the first place I fixed upon a piece of ground in the kitchen garden quite exposed to the full light of the sun; I then had all the soil wheeled out to the depth of two feet; the bottom was a red sand. I then set out the piece of ground into five divisions of two feet each, as may be seen in the annexed sketch: *a*, places for dung or leaves; *b*, space for the plants; *c*, brick walls, a brick laid flat thick; *d*, cross walls—the four inside ones pigeon-holed, the two outer ones solid. The two beds were thirty feet long. The walls were allowed to stand till they were dry and firm. At about every seven feet cross walls were built to keep the longitudinal ones erect. On the beds intended for the plants a layer of brick ends and broken stones was placed, six inches thick, for drainage; upon that I placed a layer of brush-wood, chopped short, so that it would lie pretty solid, and upon that a layer of thin turf, with the grassy side downwards. The remaining space was filled up with fresh turfy loam, tolerably mixed with well-decomposed hotbed dung and sand. This was done in August, so that by the time the planting season arrived it had settled to the height I intended it to be finally. In

order to get to the plants readily I had a row of inch deal planks laid on the cross walls in the spaces marked *a*. In the month of March following I procured some strong one-year-old plants, and planted them in two rows, six inches from the walls, and fifteen inches from plant to plant in the row. It will be observed that the walls stand about a foot higher than the general level of the garden ground. That part I had built solid, that is, without pigeon-holes. This space, for a month previous to forcing, was intended to be filled with sand about seven inches thick. This was for the purpose of blanching the Kale and keeping it compact. As soon as the leaves decayed in the autumn I cleared them off one half of one of the beds, which, of course, was fifteen feet. I placed the sand over the crowns, and filled the spaces on each side with hot dung. When frosty weather came on the bed was covered with shutters resting upon the walls. The heat from the dung set the roots in action, and, consequently, the crowns began to move also. To the best of my recollection this portion was set to work about the 1st of December, and I remember perfectly I cut excellent Kale for Christmas-day. The other portions of the two beds were forced in three successive lots, and supplied the family up to May. The experiment answered my most sanguine expectations. The Kale was thick, compact, and as white as snow, and, I was assured, of most delicious flavour. As soon as the Kale was all cut the sand was removed and laid by for the next year, the ground was forked over, and the plants allowed to spring again in the open air, only thinning the shoots to three to each crown. This was done more than twenty years ago. I left the place soon after, and have not seen it since, though I am informed the family have gone abroad, and the gardens are broken up.

Now, if I had to form another bed I would heat it with a series of hot-water pipes, and would place them in a chamber directly under the beds of plants; I should then have had five beds of plants instead of two, and, consequently, a much greater supply of the vegetable.

The supply for the last month of the season for Kale does not require forcing at all; indeed, the difficulty is the other way. It will grow in spite of your teeth, and push through the covering. For this season I never used any covering excepting sand or ashes. The lot for this season I grew in ordinary beds in the garden. I have thought since the period might be prolonged by planting a small quantity for the very purpose on a north border.

Sea-kale for forcing in the ordinary way is generally thrust behind the garden in any out-of-the-way place, because, when covered up, it looks like a common dung-hill, and is very offensive to delicate olfactory nerves; therefore I earnestly recommend, in forming new gardens, the adoption of a plan something like the one I have endeavoured to describe.

T. APPLEBY.

LAWSON'S GARDENER'S KALENDAR.*

THE only objection we can take to this excellent broadsheet is, that it appears too late; but, late as it is, it is nevertheless equally welcome. Like its predecessor of last year it is in the tabular form, and mounted on a roller, and is altogether a decided improvement on it, the subjects chosen being more generally useful to the class for which it is intended. It is illustrated with a well-executed view of the great Palm House at Kew, and among the information which it affords we find such subjects as the Barometer, Comparative Scales of the Thermometer, the Earth's Motions, Classification of Clouds, the usual Tables of Weights and Measures, and many other useful tables. We most cordially recommend this excellent broadsheet as a useful ornament for every garden establishment.

* *Lawson's Gardener's Kalendar for the Year 1857.* Peter Lawson and Son, George IV. Bridge, Edinburgh, and 27, Great George Street, Westminster.

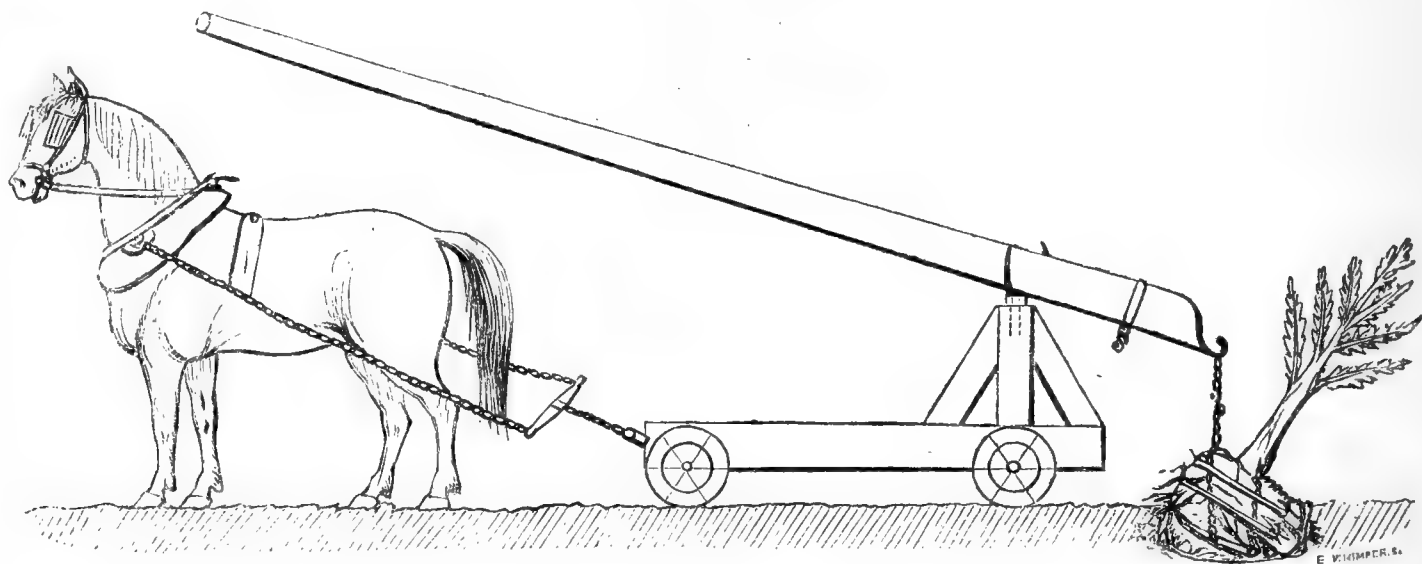
ROSES.

LET us multiply Roses, and let me tell you of a way to turn your rambling garden Roses, such as the *Lonely Rambler* (what a name for such a Rose!), *Adelaide d'Orléans*, *Boursaults*, *Manettis*, &c., quickly into *Duchess of Sutherland*, &c.

In June, July, and August bud these ramblers, say six inches apart all along their shoots; cut them off about the end of September or beginning of October, and treat them similarly to Gooseberry cuttings; that is, cut out all the eyes of the stock, with the exception of one above the inserted

bud, which ought to be left till the bud of the Rose is firmly started. If the cuttings are placed in furrows it will enable you, when the Roses have grown six or eight inches, to cover the portion of the stock where the bud was inserted two or three inches with mould, when, it is needless to say, the Rose will send out roots, and establish itself on its own roots. Now, though this is not the time for budding, still the cuttings will do now; which, if you have not got, you can easily procure, as there are few gardeners in the kingdom but can supply them; therefore let there be no excuse for any man not having his Roses.—D. FERGUSON, *Stowe, Buckingham*.

MILLER'S TREE TRANSPLANTER.



AMONGST the various works I was sent here to carry out that of tree-lifting presented itself as not the least important, rendered so by the extension of the pleasure ground and shrubberies; and as immediate effect was desirous, full-grown plants were taken from the existing shrubberies, which enabled me to effect two important purposes, namely, taking away plants where they were not required, and by their use extending the shrubberies. I am the more enabled to do this chiefly from the system of planting which had been adopted here some years ago—that of very thick planting in immense groups and borders with a general collection.

Where only a few trees are to be transplanted they may be dragged to their places without much preparation as regards a means of transit. With a very rough sledge I have seen many a shrub shifted. The process of getting the sledge under the ball is very simple. Having taken away the soil from the side of the plant most easy of access, so as to present an easy incline to the bottom of the ball, the ball is thrown upon its edge, and the sledge pushed under. It is then let down and adjusted. A pair of horses are hooked on, and away it goes. When this can be drawn on grass without doing much injury it is a very expeditious, safe, and simple process. My chief reason for not using it generally is its dead weight, requiring such physical power that the horses sink their hoofs deeply into the turf, and when on a walk the sledge tears it up.

Where the grass and walks are to be cared for something different must be adopted, not only to facilitate the process, but also to insure a safe transmissal. After all the different systems I had seen, and looking up everything I could find describing a tree lifter, I found they were either too dear or too tedious for my work.

Mr. McNab, of Edinburgh, in the January No. for 1856 of a work called the *Scottish Gardener*, fully describes his system. However safe and cautious it may be, it would take an age of time to get over my work. His system requires such a paraphernalia of planks, boards, supports, trestles, rollers, ropes, and guys, and all to be moved at the shifting of each plant, as renders it, in my opinion, a very

laborious and tedious operation when there is much to be done.

The following plan I have adopted, and I find it answers the purpose admirably well. It consists simply of a carriage seven feet long and three feet wide, having four cast-iron wheels each fifteen inches high; three strong oak beams connect it lengthways; the centre one projects eighteen inches at one end, where a fulcrum is placed, and which is well supported with stays; one of the stays being let out on the projecting beam gives more room on the body of the carriage. On the top of the fulcrum is placed a strong iron, in shape similar to a pitchfork, one end of which is let into a socket in the wood; the other two prongs are upright, acting as a pivot or swivel, and on which rests the lever.

The plant is carefully dug about in the usual way, boards put under the bottom, and as many up the sides as is thought necessary. A couple of strong chains are then brought up over all, and fastened at the top of the ball. The end of the lever, which is furnished with a few strong links and a hook, is then attached. Power is applied to the lever. The plant is swung out of the hole. The lever is veered round, and a person carefully lands the plant on the carriage. The horse moves, and away it goes, apparatus and all, to the final planting place, where a similar simple process of lowering is performed. I may add that when the chains are being attached to the ball the top of the plant may be pushed a little on one side, as the stem, in some instances, might receive injury by coming in contact with the lever.

My transplanter costs about £3, and if the price of the horse and harness be added to that it will make it altogether a most desirable acquisition. The above sketch will, perhaps, convey a better idea of the apparatus.

Besides the fulcrum fixed on the carriage, I have another portable one, which is sometimes used where the carriage cannot be brought to the immediate spot.

I may also add that the fore wheels had better be made to lock, which would be useful in turning. My own is not so. Meantime I unship the lever, attach it to the end of the carriage, and thus it acts as a helm to guide the apparatus.—*William Miller, Gowran Castle Gardens*.

SERICOGRAPHIS GHIESBREGHTIANA.

Presented to the Horticultural Society by Mr. J. A. HENDERSON, F.H.S., of Pine-Apple Place, in April, 1847.



A HALF-HERBACEOUS shrub, with smooth stems, and dark green oblong lanceolate leaves. The flowers are arranged in small, loose, one-sided, and downy panicles, and are sessile on the side branches which bear them. The calyx is hairy, and divided into five very narrow leaves. The tubular corolla is about an inch and a half long, bright purplish red, with a two-lipped mouth, of which the lobes are nearly equal, the upper being two-toothed, the lower three-toothed.

It requires the same treatment as *Justicias* and similar soft-wooded stove plants. It is easily increased by cuttings, and flowers freely in October, November, and December.

It is a very handsome winter-flowering stove shrub, remaining a long time in bloom. Its bright scarlet flowers make it very desirable in winter. — (*Horticultural Society's Journal.*)

BREWING.

THE following rules for brewing may appear superfluous; they are written for those who are as ignorant as I was, at which time I should have been most grateful for such directions. They will probably be useless to you, as I hope to see in your pages many useful hints on the subject. Any lady may, with the assistance of a lad, brew with no more inconvenience than is found in gardening.

DIRECTIONS FOR BREWING.—Measure pails and coppers; have perfectly clean a mash-tub, with a spigot or wooden tap fixed in a wicker basket inside the tub to prevent the malt escaping into the liquor, a stand for the same, two tubs,

a cooler, a masher jet, large sieve, and stand for it. For the cellar—sweet casks, a tun, or large tunnel, two large vessels, one for the barm or yeast, the other for surplus beer for filling up, or a small cask ready tapped is better if it can be spared, a rod or whisk to stir the barm and keep it under, a large pan to put under every cask to catch the workings (the casks must be fixed inclining on one side), or for small casks one pan for two inclining to each other. These things are necessary for those who brew in large quantities; but those who brew in a small way may use a tub as a cooler, a bowl as jet, a couple of clean sticks as sieve stand, and, indeed, make many other shifts,

To keep beer twelve months a good cellar is indispensable;

the beer to be brewed in October, and 4 bushels of malt allowed to the barrel, or 36 gallons, 1 lb. of hops to each bushel of malt; some prefer 1½ lbs. of hops. Excellent beer may be made to keep six months by using 1 bushel of malt and 1 lb. of hops to 12 gallons of beer.

1ST MASH.—Use water at 172°, allowing some degrees for cooling in the transfer from copper to mash-tub. Allow 5 gallons of water to each bushel of malt. When it has cooled to 172° add the malt, stir and turn well with the masher for twenty minutes or half an hour, add remainder of water, give a good stir to the whole, cover tub well over to keep in the heat for one hour and three quarters; then let it run from the spigot *slowly* at first, return to mash-tub the first pail, draw the whole off into a tub, and, as soon as the copper is emptied for second mash, boil *en gallop* well one hour and a half, the last three quarters of an hour with hops, observing to break the masses as you put them in.

2ND MASH.—The water from 190° to 200°; mash ten minutes, let it stand covered over one hour, boil one hour *well*, the last half an hour with the hops strained from the first mash. Cool the whole to 75° if intended to keep, or 80° if intended to be drunk quickly. Set the whole to work with one pint of *best store barm from a brewhouse*; in fourteen hours tun. Sometimes it is difficult to get it to work; if so, a good stir has the desired effect, or a little flour dredged lightly over the top. This is not often required if covered over and kept warm. Very good table beer may be made in a

3RD MASH, by merely filtering hot water through the malt once or twice; boil up, and when boiling take out some in a pail, stir well into it 1 lb. of coarse sugar to 2 gallons of liquor; stir this well into the whole, and boil with the hops one hour. Nine gallons may be made from a 3 bushel brewing, and, if not needed for the family, poor neighbours gladly receive it. If 4 or 4½ bushels are used to the barrel for best beer, 18 gallons of good small beer may be made by adding the sugar, which no one can detect.

Novices should understand that nearly the whole of the water mashed with is lost in the malt; that a considerable quantity evaporates in the boiling; the hops also suck up some. Extra must be made for filling up the casks during the time they work. As a general rule, half the water is lost in the first mash, after which the loss is trifling. In boiling, the copper can be kept from boiling over by just patting the liquor down with the masher or jet. Beer should be bright and sparkling, which objects can be only obtained by the greatest accuracy in brewing. No *cold* water should touch it; every vessel should be rinsed with hot, and for the first two hours after tunning the casks *must* be kept constantly *more* than filled up; a small tunnel with a long pipe may be used for this purpose. As the pans fill under the casks, sweep off the barm with the whisk, and return the beer to the vessel or spare cask. After a few hours it may be attended to every hour or so, and gradually it will require less attention. After a week the casks may be set up straight. When they have finished working take out some of the beer with a vial tied to a string, put in some dry hops, 2 ounces or rather more to 18 gallons, bung down tight with bungs covered with canvass.—A ONE YEAR SUBSCRIBER.

THE CAT.*

THIS is a very useful little book, and written in a kind spirit for that purpose. The following is a fair specimen of its contents:—

"ADMINISTERING MEDICINE TO CATS.—This is a difficult process in imagination, but easy in the performance, when undertaken with firmness, gentleness, and courage, and without noise.

"As I previously remarked, there is no animal so scrupulously cleanly as the cat; therefore the chief care must be not to soil the fur with the medicine, as it will not lick it off, and will pine away at the smell.

"Roll gently the sick cat in a large cloth, such as a tablecloth, carefully including all the claws of both the front and back, so as to resemble a mummy, leaving only the head

out. Then place it upright between the knees of a sitting person, place another cloth under the jaw to keep that clean, and then with a gloved hand open the mouth wide, but gently, at one effort, holding it open, and pouring the medicine from a teaspoon down the open throat, a very little at once, not to cause choking, but letting it be comfortably swallowed in very small quantities. Do not put the spoon into the mouth, as the cat will bite it and spit out the contents, but pour it from the small spoon. Then with a sponge and chilled water wipe off the least impurity from the mouth and chin, rub it dry with a clean cloth, and unsathe the patient, and put it in a quiet, warm, comfortable place for about an hour and a half. Do not give food or drink during that time, or the medicine will return again; as in human beings, it is necessary to watch the effect of your medicine. You must make a temporary hospital of some unused, uncarpeted room, with a fire, as warmth is half the cure, and every creature in illness requires it more than at other times. Have a comfortable bed for your patient, leave a dish of water in case of thirst (where it would not be pernicious), and do not allow any one but yourself to enter, as quiet and sleep are nature's own and best remedies; without them there is no cure."

GLASS FOR HORTICULTURAL PURPOSES.

I, FOR one, feel greatly indebted to Mr. Robson for drawing attention to "the merits and demerits of sheet glass," in your paper, No. 432, and perfectly agree with him in saying that any person requiring sheet glass for horticultural purposes should insist upon having it of good quality. A great proportion of the glass advertised at a low price is the sweepings of the Belgian manufactures, called fourth quality, and is totally unfit for horticultural purposes.—JAMES PHILLIPS, *Horticultural Glass Warehouse*, 116, *Bishopsgate Street Without*.

NEW AND RARE PLANTS.

LOBELIA TEXENSIS (*Texas Lobelia*).

A HARDY herbaceous border plant. Native of Texas. Flowers crimson, blooming during summer.—(*Botanical Magazine*, t. 4964.)

ANSELLIA AFRICANA (*African Ansellia*).

A noble-looking but not showy stove Orchid, the flowers having a dull, pale green colour, with many dark purple blotches. Native of Fernando Po. Blooms in January.—(*Ibid.* t. 4965.)

STOKESIA CYANEA (*Azure Stokesia*).

This belongs to the Natural Order of Composites, and rivals in beauty the China Aster. It is rare even in its native country, South Carolina, Georgia, and Louisiana. It was introduced at Kew, in 1766, by Mr. James Gordon. It has been variously named *Carthamus levis* and *Carolinianus*, *Cartesia centaureoides* and *Centaurea Americana*.—(*Ibid.* t. 4966.)

PHYTOLACCA ICOSANDRA (*Long-racemed Poke Weed*).

An under-shrub, that will probably bear greenhouse treatment. Native of Mexico. The flowers are inconspicuous, but the very long bunches of dark purple berries are ornamental. The *P. icosandra* depicted in the *Botanical Magazine*, t. 2633, is really *P. Mexicana*.—(*Ibid.* t. 4967.)

RHODODENDRON CAMPYLOCARPUM (*Curved-fruited Rhododendron*).

This abounds in the valleys of the Sikkim-Himalaya Mountains, at elevations varying from 11,000 to 14,000 feet. It is hardy, but, blooming as early as April, the flowers can only be secure in a cool greenhouse. It is a bush six feet high, with sweet-scented, sulphur-coloured flowers.—(*Ibid.* t. 4968.)

* *The Cat, its History and Diseases*. By the Honourable Lady Cust Groombridge and Sons.

QUERIES AND ANSWERS.

GLASS OF GREENHOUSE BREAKING BY FREEZING.

"Will you give your opinion respecting the glazing of a greenhouse, used also as a Vinery with heat, the panes of which are very large and not fastened with putty? The consequence is that every winter several of them are broken by the frost.

"The reason they were not originally glazed with putty was that the inside moisture might partially escape, and drip to a certain extent be avoided. The consequent breakage, however, of such large panes becomes a serious consideration, and I am desirous to know (as I can have it done still) whether the panes, fastened and made air-tight (as they would be) with putty is a thing which is considered objectionable in the best houses, and whether the inside drip is a necessary evil which gardeners have to put up with when the atmosphere of the Vinery or greenhouse is warmer than the outward air, and especially in frosty weather.

"I am aware that panes might be put in with a considerable space, half or a quarter of an inch between the laps, which would render the water less likely to congeal and break the glass, and give plenty of ventilation; but then the rain would in that case be likely to drive in at times, which would be objectionable; or, again, the edges of the panes are, I believe, in some cases made exactly to fit without any laps at all; but this, my glazier tells me, could not be done with any ordinary glass, and which would, at all events, be now too late for me to think of."—**QUERIST.**

[We fear your glass must be much rounded to allow of so much water freezing. Is there nothing in the glass being too tight from bar to bar? In large squares we would allow from one-eighth to three-sixteenths of an inch lap. If the glass is flat the panes will go so close as to require no puttying. If at all rounded it is best to putty between, and if the putty has some white lead in it all the better. A small space of a quarter of an inch may remain unputtied in the middle. In a flat house there will be drip in sudden changes. In steep houses it runs down the sashes. A flat piece of zinc for the lowest panes to rest upon, and with several little openings, will let the moisture escape. In flat houses, where drip would be injurious, the sashbars, instead of terminating in a point, should have a rounded groove on each side. We have seen tin and copper grooves fastened to the sashbars for this purpose, and answering admirably. Where a house or pit can be covered this is less necessary. We place little value on open spaces between panes of glass if air-giving by the regular means is attended to.]

HYACINTHS TOO SHORT STEMMED.

"In October last I procured half a dozen Hyacinths for about as many shillings, and have grown them in vases in the window. The flowers are now just bursting; but they are so very short in the stem that you must look down into the leaves to see anything of it; I mean the leaves have so outgrown the flower-stalk as to almost completely hide it. This is the case with all except one, *La Candeur*, single white; but I cannot tell why this is, as they all have had the same treatment. I think I put them in the window too soon after placing them in water, although I 'hid' them for three weeks in a cupboard.

"You have spoken of 'paper funnels' to increase the length of the spike; but I have not found this answer at all. I am sorry I have not succeeded this year, as I had a fine show last year, and felt sure of the same again. Do you think it is any use for me to put them in a dark place or cupboard now?"—**S. B. R.**

[We fear we cannot help you. Possibly your bulbs were rather soft, instead of being firm and well ripened. It would be of no use putting them in the dark now. The darkness is only useful until the glasses or the pots are full of roots. You might try a little portion of manure in the water, such as a pinch of guano, or superphosphate of lime, or a drop of spirit of hartshorn. Are you sure the flower-stalks did not get nipped and too much chilled in one of those frosty

nights, or that the water was not next to freezing? We saw, about six weeks ago, several Hyacinths in the chimney corner in a cold evening, but coming dumpy, as you describe yours. The lady used the paper funnel, and speaks highly in favour of it, and that is only one instance in five score. We do not guarantee its success in every instance.]

WINTER AND SPRING GARDENING OUT OF DOORS.

"I believe at Moor Park that Lord Robert Grosvenor has a good method for filling, during all the winter months, the beds within sight of the house with flowering shrubs, such as Laurestines, &c., also the variegated-leaved *Aucuba Japonica*, instead of leaving them bare and unsightly as in most gardens. These are brought in from the reserve or back grounds in pots, and removed when necessary.

"It occurs to me that a very gay spring garden might be produced by introducing in those beds, during the months of April and May, before 'bedding out' takes place for the summer, some plants which bloom during the spring exclusively.

"Will you favour me with the names of about a dozen plants, such as Daisies, Pansies, Wallflowers, Stocks, &c., which may be brought forward in pits at once, so as to turn out in bloom during those months when we are cheered occasionally with bright, fine, and warm weather, and every one is anxious to begin 'gardening?'—**A NEW SUBSCRIBER.**

[The plan of filling beds near the principal windows in winter with different shrubs is now universal in first, second, and third-class gardens. Every kind and form of "evergreen" is suitable, and generally one-third of the number is of variegated plants, chiefly Hollies, and about the same proportion of upright or pyramidal-growing kinds, as *Cypress*, *Juniper*, *Arbor Vita*, and such things. They are much better without pots. Hundreds of such winter furnishing plants are used in the Experimental Garden without pots, being moved twice a year. They make so many roots "near home" that they might be moved any day in the year, or once a month during the whole summer. *Wallflower* is the only flower that will answer to mix with evergreens in winter and spring beds; but borders or bands of spring flowers will do round such beds, not mixed with the evergreens, which would destroy their avowed use, as well as the effect they are intended to produce. There is no spring flower that will answer to be forwarded in pits, and then planted out to bloom—the first easterly wind settles all such; but in many places it is necessary to keep *Nemophilas*, *Collinsias*, and other annuals in cold pits over the winter to bloom from the middle of April.]

ORNAMENTAL GRASSES.

"M. E. H. is desirous to grow some specimens of ornamental Grasses this season. Would you insert a list of about twenty varieties in your next number, and also mention if the new Pampas Grass, advertised by Messrs. Henderson, is really hardy?"

[There are not ten or even six ornamental Grasses in cultivation, and yet every Grass is ornamental. The *Pampas Grass* is the king or queen of them all at present, and is hardy in the climate of London. The Tussock Grass (*Festuca flabellata*) was much spoken of as an ornamental Grass a few years since, but we hear nothing of it now. The different varieties of *Arundo* have been the old favourite Grasses with gardeners. Then there is *Briza maxima*, and there are other kinds beginning to be collected in the nurseries; but we have no regular assortments of Grasses yet for the pleasure ground. We invite, therefore, a thorough discussion on ornamental Grasses among our contributors and correspondents as the most likely way to arrive at a good selection, and shall be obliged by communications on the subject.]

CONSTRUCTING A PEACH HOUSE.

"I am making a new garden, and wish to ask if the Peach house at C. Mills', Esq., Hillingdon House, Uxbridge, runs north and south? (*Vide* COTTAGE GARDENER, No. 434, page

273, at bottom.) If so, I do not understand what Mr. Appleby means by a *wall running down the middle*. If, as I understand, it runs the whole length parallel with the sides of the span-roofed house, it would seem to me, as it were, to divide it into two lean-to houses, and the trees on the east side (facing the east) would get only the morning sun, and those on the west side the afternoon sun; but I fear I do not at all comprehend Mr. Appleby's meaning. I wish to have my Peaches and Nectarines safe under glass, and to devote a south wall to two or three good sorts of Pears, Apricots, Green-gages, other good Plums, and, if room, a couple of Ribston Pippins."—FRANK GRANT.

[The Peach house at Hillingdon House certainly runs north and south. We are not surprised that Mr. Appleby's meaning is obscure to you. Instead of a *wall running down the middle*, read a *walk running down the middle*. It is just a printer's mistake of putting the letter *l* instead of *k*.

By all means secure your Peaches and Nectarines under glass. You will then be sure of ripe wood in the autumn, and good crops of well-ripened fruit in their season, only make provision to give abundance of air.]

TO CORRESPONDENTS.

VINE FORCING (S. W., Guernsey).—Put the outside covering so as to be about two inches from the glass. The border outside should be covered over the roots a week at least before you commence forcing. You may obtain Simmons' Hygrometer of any philosophical instrument maker in London, we should think, if you send a sketch of what you need.

COLOURED PICTURES OF EGGS.—We have various answers to the inquiry about these. Among the books recommended is "British Birds and their Eggs, coloured from Nature," published by Groombridge, Paternoster Row, and one published by the Tract Society.

CAMELIA NOT BLOOMING (J. W.).—The Camellia leaves are perfectly healthy. We can form no idea of the cause of the buds dropping when the other plants thrive so well. Have you thinned the buds so as to give them room to swell and expand? because the clusters of flower-buds are so thick in some that they throw each other off if not thinned. The causes of buds dropping otherwise are chiefly two—want of water when the buds are swelling freely, and too much moisture from defective drainage. See the interesting article the other week from Mr. Errington.

MELON CULTURE (J. Joly).—Possibly we may give an outline of Melon culture somewhat at length; meanwhile, look back to the number for May 6th, 1856, for the mode of preparing your dung bed, making it as sweet as possible. The soil should be fresh, stiffish loam, from fifteen to eighteen inches deep, and with a little lighter just to go round the ball when turned out. You may turn out the plants into hills or hillocks in the centre of the bed, and earth up gradually in the usual way until you come to the outside; or you may make a ridge about eighteen inches wide, and by means of boards, &c., prevent the roots going wider, as spoken of lately by Mr. Fish for Cucumbers. When your young plants are fit for potting give them a pot each, and when they have made two other joints pinch out the terminal point, and that will cause shoots to come from the axils of the leaves. If you have a plant in each light you will require four shoots from each; but as you are a new beginner we recommend you to have two plants for a light, and take two shoots from each, one to be trained back and one to the front. These being selected, prick out every other young shoot that may show itself with the point of a penknife, and when quite small, so that the wound will not be felt. This done, there must be no continuous stopping of these main shoots, as you would be disposed to do, it seems, with Cucumbers. Train these shoots without stopping until they reach within a foot or so of the side of the frame; but as they grow prick out each bud from the axils of the leaves until about six inches from the point of the shoot. This is to prevent secondary shoots coming all over the stem. When the shoot is stopped as mentioned above, the buds from the axils of the leaves where they have not been pricked out near the point will soon push, and will most likely show fruit at the first or second joint if the seed has not been young. If they do not show the point must be nipped out to make them push again. If they show fruit stop the shoot at the joint beyond it. The great thing is to get as many fruit to show about the same time upon a plant as you wish at once. As soon as the fruit-blossom opens impregnate it with a male blossom, choosing a dry, sunny day if possible. Most likely you will require protection at night until the weather is warm enough. The temperature required is from 70° to 80° bottom heat; night temperature from 60° to 70°; day temperature from 70° on to 85° and 88° with sunshine. Keep the surface of the soil dry as the fruit approaches maturity. You may read volumes on the Melon, but these are the chief things to be attended to.

FUCHSIA DOMINIANO (E. G.).—This Fuchsia requires abundance of unshaded light to make flower-buds freely. We do not see the cause of your failure. If over-luxuriant, perhaps your compost is too rich.

SALVIA VOLTAIRE (Amateur).—The flower-spike you have sent enables us to determine that it is *Salvia confertiflora*.

SCALE ON PEAR TREES—WRITING ON PORCELAIN LABELS (A. B. W.). Wash the trees with water at about 200°, and then paint them with a clay paint, holding in it flowers of sulphur and glue or size. The sulphur may be about a twentieth part and the glue a fortieth part. We have had little practice with such porcelain labels, but when we brushed them slightly with oil the pencil marks remained pretty well. We be-

lieve a peculiar ink suits them. Will some kind friend inform us if this is so?

SYRIAN VINE, &c. (Constant Reader).—If you apply to any of the nurserymen who advertise fruit trees in our columns they will be able to furnish you with the Syrian Vine and American Cranberry. The Syrian Vine requires to be grown in a hot Vinery, that is, in the same heat as the Muscat of Alexandria. It produces an immense bunch, so large that we had one produced out of doors against a wall twenty inches in length. It hangs very late, and when well ripened is a good Grape. The nurserymen will be able to tell you the prices they charge. *Myatt's Surprise* Strawberry is a very large one, and makes a fine show fruit, but is not remarkable for its flavour. You will find *Webber and Co.*, of Covent Garden, a good house to send your early Strawberries to. They will give you the value of them at the time.

TREES MOVED SO AS TO OVERHANG A HOTHOUSE (W. Cullingford).—Your neighbour has no right to do this. Let your attorney give him notice to remove them.

GRASS SEEDS (S. W., Bath).—Do not by any means use the sweepings of a hay loft if you want to get a good pasturage. Grass for hay is always cut before the seed is ripe, and, consequently, the sweepings of a hay loft are composed of chaff of grasses and seeds of weeds. If you want a really good permanent pasture to be cut for hay, procure from some of the seedsmen who advertise in our columns the following mixture, which will be sufficient to sow your third of an acre:—2 lbs. Italian Rye-grass, 3½ lbs. Perennial Rye-grass, ½ lb. Meadow Fox-tail, ½ lb. Yellow Oat-grass, ½ lb. Hard Fescue, 1 lb. Meadow Fescue, 1 lb. Red Fescue, ½ lb. Wood Meadow-grass, 1 lb. Smooth-stalked Meadow-grass, ½ lb. Red or Broad Clover, 1 lb. Perennial Red Clover, 1½ lb. White Dutch Clover. Have the Clover seeds mixed separately, and sow them after the Grasses, because, if mixed with the Grasses, the Clover seeds, being heavier, would fall to the bottom of the bag, and you would not have them evenly distributed over the ground.

PRUNING FRUIT TREES (A Constant Reader).—You ought not to have allowed your lateral branches to produce shoots eighteen inches long; by doing so you allowed the constitution of the tree to be weakened to the extent of nourishment which these shoots obtained. The great art in fruit-tree culture is to economise the sap, and to give direction to the branches such as to induce fruitfulness. You must cut down these long shoots to within two buds of their base, and watch during summer that they do not again throw out such strong growth. If they should, pinch off their tops, and drive the sap into another channel; they will then, in all probability, form spurs at their base. Those which are four inches in length you can reduce one-half.

FLOWER-GARDEN PLAN (J. Muston).—We never furnish plans. We only make notes on the planting proposed on such plans as are sent to us.

GARDENER FOR CANADA (A Gardener without Influence).—Put in an advertisement stating your wants and qualifications.

MANUALS FOR THE MANY (J. C. W.).—You can have any or all of the Manuals sent free by post. By inclosing the publishing price in stamps, with one in addition for each for the postage, you will receive them in return.

VERBENA CUTTINGS DAMPING OFF (C. O.).—The reason why your Verbena cuttings went off was, that the box was six times too large for them. You must be skilful to have saved one-half of them, as you say you have, so early in the year. If you had them in a hotbed you could not have saved one in a score. We always use small pots, No. 60, for most cuttings, and they alone before the middle of February, and we have recommended them from the first to amateurs and all new or young beginners.

DURATION OF PEACH TREES (A Know-nothing).—Your Peach trees are not debilitated with age, but diseased by mismanagement. We have seen Peach and Apricot trees fifty years old, which were in a much worse plight than yours, renovated with all the vigour of a young tree. Look at the roots, and see if they have penetrated into an ungenial sub-soil. If they have cut off all such, and put a layer of brickbats, lime rubbish, and other similar material under them, to prevent them doing so again, and to those which are left put fresh maiden soil, with about a fourth part of leaf mould and well-rotted stable manure.

CINERARIAS (An Amateur Gardener).—The flowers were entirely destroyed, every petal being loose, and nothing entire except the disc; but we saw no indications of a double flower among the debris.

CHINESE PRIMROSES (G. Alexander).—The flowers sent are very large and well coloured.

THE POULTRY CHRONICLE.

CREWE POULTRY SHOW.

EVERY town has its peculiar feature, and Crewe is not an exception. Called into existence by the London and North Western Railway's factories, it is inhabited by a population composed principally of working men, who know how to appreciate a few hours' relaxation, and who, with that natural love of something alive which is common to all men, delight either in Fowls, Pigeons, Rabbits, or Canaries. All these were exhibited in the Cheese Hall, a lofty and spacious building in the centre of the town. In all our experience of these meetings we do not recollect ever to have seen one where the spectators seemed so thoroughly to enjoy themselves. Although the weather was bitterly cold, and the

snow was deep under foot, yet a bright and cheerful sun shone overhead, the building was free from any draught, and nothing interfered with perfect comfort while viewing the Exhibition.

Before going into the details of the classes we will speak of one part of the Exhibition which we cannot approve. There were two series of classes, called the "First Division" and the "Second Division;" one open to all, the other confined to residents within twenty-five miles of Crewe. We can understand the motive of this, but we doubt the wisdom. The intent of competition is to improve either in the knowledge or the quality of the object shown. This can only be accomplished by contact with better specimens, and the fact of having such a division as we have named at once prevents its attainment. We would also offer a suggestion to the owner of the pens used on the occasion, and that is to provide some sort of solid partition between them. There is seldom a building large enough to put up some hundreds of pens with sufficient space between them to prevent cocks from fighting, and a valuable bird may do himself a serious injury.

The first were two special prizes; one offered for *White Dorkings* by Sir P. G. Egerton, which was gained by Mr. Fell, of Warrington, and a Silver Cup given for the best pen of *Spanish*, gained by the same gentleman. Another special prize for *Geese* went to Mr. Wolfe. There was then another Cup to award for the best pen of *Game*. To the honour of the licensed victuallers of Crewe we record that this was their gift. They have been the first to respond to the call so often made. Mr. R. Ashley, of Wistaston, won it.

Thirty-three pens of good *Spanish* contested the prizes. Messrs. Pointon, Fell, and Strange showed birds worthy of any Exhibition. The *Dorkings* were equally good; but the *Cochins* did not shine, and yet a few years since, in this immediate neighbourhood, Dr. Cust Gwynne reared wonderful birds.

The *Golden-pencilled Hamburgs* were much better than the Silver, but neither call for especial mention. The *Golden-spangled* were good. The *Polands* were excellent. This will be understood when we say the prizes went to Messrs. Coleridge, Dixon, and Strange. Mr. Whittington showed some good birds; and took one prize. We would not speak disparagingly of the *Game*, but we were disappointed in them. We looked in vain for the old Cheshire Piles; and after such an exhibition of these birds as we saw at Liverpool, and Birmingham, and the Crystal Palace, we were disappointed, as they were not up to the average. The *Gold-laced Bantams* were very good. None of the others deserved mention.

In the single cocks the *Spanish* were again most excellent, and Mr. Rodbard beat all his competitors. Mr. Wilson also showed a very fine *Dorking*, which deservedly took the prize. Another bird of great merit in the single classes was Mr. Ashley's *Duckwing Game*. The *Aylesbury* and *Rouen Ducks* were very good, especially the latter. Mr. Theed Pearse took first prize in both classes; but if we were to mention the best pen of Ducks in the Show we would speak of the *Black ones* shown by Mr. Burn.

There was a good display of *Pigeons*, many of them high-class birds, especially the Barbs and Owls.

The second division was then a renewal of the Show, so far as judging, catalogue, and classes were concerned. The best class was the *Spanish*, which the Judges pronounced to be very meritorious.

The *Geese* and *Turkeys* were also good.

A capital show of *Rabbits* concluded this varied bill of fare. The caterers, Messrs. Edwards, Colton, Sheppard, Margetts, and others, were all at their post, working as hard for the amusement of the public as though they were largely paid for their labours. As their only remuneration is the tender of thanks by those who have reaped pleasure from their exertions, we offer our best acknowledgments for a pleasant day, and congratulate them on the success of their first attempt, which is the natural result of the zeal with which they mastered the novelty of their duties, and the perseverance with which they attended to them.

Messrs. Pargum and Baily were the Judges.

BLACK HAMBURGHS.

I HAVE just read in the new edition of "The Poultry Book" the very careful description of the Black Hamburgs by Mr. Hugo, of Exeter, and as a keeper and breeder of this class, as well as of the other classes of Hamburgs, I can bear full testimony to the accuracy of the description, the weight of the birds, and also to their being "the best layers under any circumstances." I have some Spanish pullets, sisters of first-prize birds this season, hatched in April, which have not yet laid an egg; but my Black Hamburg pullets, hatched at the same time, have been laying more than three months, and both classes of birds have been fed and treated in every respect alike. Taking into account the valuable properties of birds both for eggs and the table, as also the extremely beautiful plumage of these birds, I do not consider that we possess a more profitable kind, and I am at a loss to understand why they have not yet obtained a separate class for themselves in the prize-list, more especially in the north of England Exhibitions, where they are most known and valued. A class of Black Hamburgs would soon obtain more exhibitors than the Brahma Pootra class seems to have done or is likely to do. There was great praise bestowed on a pen of this kind at Preston in January, 1856, and I purchased them in order to introduce fresh blood, and to my surprise I instantly detected a cross with the Spanish, besides the strain being otherwise very inferior. So much for Judges and their praises! I this year sent a pen of very beautiful birds to Preston, in order to test their merits in their own country, and, though there were only four exhibitors of this class, my birds were only awarded a second prize, the first being given to a pen of Malays, where there was no competition. Such is the lottery, as a gentleman remarked to me at the Crystal Palace Show, of Poultry Exhibitions.—THOS. LYON FELLOWES, *Beighton Rectory, Acle*.

CRESTED OR POLISH FOWLS.

I BEG to corroborate the experience of "SAM SLICK" as to the great value of the Crested fowl, which I cannot be induced to call Polish, believing the appellation erroneous. They are not only probably the handsomest of poultry, but in localities suited to them as good as handsome. I have several hatched in April which laid at less than six months old, when fowls of other breeds were not laying. I have, also, to corroborate his statement of shyness caused by the size of the crest. I am glad to see "SAM SLICK" agrees with the printed description I put forward, that the crest should be globular, floating, and not falling down over the eyes, rendering the bird an object of pity, too frequently seen at Poultry Shows.

In one remark my experience will not permit me to agree with him, namely, the question of white feathers in the crest of the Golden Hamburgs, by which name they have already been known in Ireland, and, I believe, the correct one. I have bred these birds for twenty-five years without white feathers in the crest. About three years ago I had a cock from Mr. Vivian which had white feathers in his crest, and his offspring have them. I believe the originals of the Crested fowl to be the White-crested Black of Aldrovandus; and the White-crested Red, more or less splashed on the body with black, the *Hamburg cock* as represented in the Dutch and Hamburg paintings 200 years ago. The improvements on that are the accurate markings produced by careful breeding, which at first were spangles, then lacing and obliterating the white crest, having in its stead golden feathers tipped or laced with black. If I am not mistaken, I believe the existence of the White-crested Red was denied in an early number of THE COTTAGE GARDENER. I beg to say that I have stuffed specimens of such birds with pure white tails ended with black.

While on this subject I beg to moot the question, Should Crested fowls have a comb in the form of two spicula or not? I maintain they should; that it is a main characteristic of the Crested fowl, which no other has, and that the absence of it takes from the sprightliness of the bird and the support of the crest.—R. P. WILLIAMS.

[What says "SAM" or any other lover of Polands to this question?]

HAMBURGHS VERSUS COCHINS.

IN the May number of THE COTTAGE GARDENER of last year I inserted a report of the produce of four Silver-pencilled Hamburg fowls—chickens of 1855—during the first four months of the year. I was induced to do so out of a friendly spirit of opposition to your correspondent “FELIX RABBIT,” against whose Cochins I drew up my Hamburgs in battle array.

My opponent did not consider that it was fair to select four months only of the year as the battle-field, and he therefore expressed a hope that I would write a report of the year's produce of my birds in January, 1857.

Being thus challenged I have descended from my perch, and herewith throw down the gauntlet to “FELIX RABBIT.”

The number of eggs laid by my four Silver-pencilled Hamburg fowls during the twelve months of 1856 is this :—

January	55
February	75
March	88
April	84
May	104
June	76
July	88
August	92
September	49
October	6
November	24
December	33

Total 774

I will make no remarks on this return, merely calling the attention of “FELIX RABBIT” to the fact, that “the average that each bird produced is larger than 150 each,” being actually rather more than 190 each.

Now, on the principle that the interchange of opinions and experiences is one of the most useful points of a poultry chronicle, as your correspondent, “AMATEUR,” justly remarks, I will venture to send a few more notes on “my pets,” the Hamburgs.

First, with respect to the observations of “FELIX RABBIT,” I would observe that I did not write of Hamburgs kept in mere walks, such as are frequently used by poultry amateurs. I said that I had a good grass walk for them, meaning by this that they had a good grass field to roam about in.

What they will do in a more confined space I do not pretend to say; but “E. B., Oxford,” says, that “with a fair run and proper treatment they will lay almost as early and as well as Cochins.” I think he is right, and, with a good grass run, I maintain that they beat Cochins into fits. “FELIX RABBIT” is quite right in his opinion that any Hamburgs would fall off in the moulting season. My October return of only six eggs tells plainly that such was the case; and what description of fowl, I should like to know, does not fall off at that time?

But the period of moulting does not last long. I had a fair quantity of eggs in November again, and a still larger quantity in December, when the weather was unusually severe; and though I have three Cochins—to which I alluded in May—which have laid well during November and December, yet now they begin to want to sit, and not an egg have I had for the last fortnight. So much for “Cochins” versus “Hamburgs.”

Again, with respect to the rice as food, to which “FELIX RABBIT” alludes, I would add that boiled rice has been my principal food throughout the year. At times it has been changed for a short period to barleymeal, or barley, or oats, by way of an alterative; but still rice has been the principal food of my birds, and they have had no nice corn-stacks to go to, for the best of all reasons, viz., that I have none.

Another of your correspondents, “HENRICUS,” observes, that as winter layers Hamburgs are very poor indeed. Let him look at my return. I do not consider the number of eggs laid by my four Hamburgs in the months of January, February, November, and December, as by any means “very poor indeed.” Certainly the eggs are smaller than those of many other fowls; but the yolk of a Hamburg's egg is large for the size of the egg. But whilst on the subject of the size of eggs, let me ask what fowl there is which

lays so small an egg in proportion to its size as the Cochin? She eats enormously, with an appetite voracious, and then, after all, out comes an egg which reminds one of the old fable of “the mountain in labour.” But, however, I have not quite done with “HENRICUS.”

“I saw young Harry with his beaver on,” and I intend to give him a peck or two to make him doff the same. He says that he had some Silver-pencilled pullets given him, but that the first thing they did was to become ill with the roup, and, in fact, all his other fowls. If he had the roup in his yard, it was a natural consequence that the other fowls should become liable to the visitation; but this does not speak very well for his care in the management of his poultry. A roupy fowl should be treated like a convict, and sent to solitary confinement; and not only that, but he should not have his “ticket of leave” granted until he shows real and true signs of a lasting amendment. Of course, if “HENRICUS” took no care of his diseased Hamburgs, he could not expect them to be prolific. The very fact of their not beginning to lay until April proves that they were not taken much care of, and so he was at last truly thankful to get rid of them. Well, I hope his friends will not send him any more.

With respect to the extreme delicacy of Hamburgs to which “HENRICUS” refers, I must say that I differ from him, I have often heard people call them delicate fowls. My own experience, however, has never led me to consider them such. I have kept them nearly five years, and have lost but very few indeed. Neither have I to complain of their roaming about on buildings, or tearing all the thatch off ricks, though all my buildings are thatch, and there are hay ricks close at hand; and as to their being as mischievous as a peacock in a garden, I have always found that, should they intrude within these sacred precincts, after being once or twice scared away, they will not come again; at least, such I find to be the case with my own birds, and my garden is not fenced in at all, being merely separated from the grass run of the fowls by a carriage drive.

I fear, Mr. Editor, that you will think me a great trespasser upon your time, your patience, and your space; but here I am challenged, and, therefore, come down from my perch, and whilst “I am on my legs” I will take the opportunity of wishing to the POULTRY CHRONICLE continued success, feeling convinced that each succeeding year will add fresh laurels, fresh lustre, and fresh fame to that class of fowls of which there is no prouder champion than yours most truly—SILVER-PENCILLED HAMBURGH.

THE CHARACTERISTICS OF A PARTRIDGE-FEATHERED COCHIN COCK.

AMONGST the classes for single cocks at our late Liverpool Exhibition a Silver Cup was offered for the best Cochin-China cock of any variety or age. In this class specimens of all the various colours were exhibited. The cup was given to a very fine Buff bird; another of the same colour was highly commended, and, by way of finish, I presume, to their labours, a cock called a Partridge-feathered bird was highly commended. Now, I do not intend to complain in any way as to the decision respecting the cup; it was, perhaps, on the whole, fair. My very strong objection and cause of complaint are the “highly commending” the so-called Partridge cock, and overlooking altogether a pure specimen of this breed. By way of justifying this remark I will try fairly to describe the two birds, giving precedence to the highly commended one. His shape was very good, being short in leg and well feathered, body large and well formed, and, indeed, generally correct in all points as respects shape; colour (if previous notions are correct) vile, being a dull, rusty, dead brown, with patches of brown feathers over all the breast, thighs, and rump. I may notice, also, that his owner was equally astonished with myself at the notice taken of him by the Judges, having stated to a friend of my own that he would willingly have taken twenty shillings for him the previous day—a remark soon to be realised, for, though he was entered in the catalogue to be sold for £20, this was reduced by Mr. P. Cartwright (the owner) to £3 within two hours of the opening of the Exhibition; and, finding no buyer even at this reduction, he was finally sold

by Messrs. Lucas and Co., at their sale on the 30th ult., after the utmost efforts of those gentlemen in parading the high honours awarded to him in the Exhibition from two of the ablest Judges in the land, for a nett sum to his owner of less than twenty shillings.

The unnoticed one is a remarkably fine cockerel, now nine months old (pen 325), his shape and condition almost perfect, two of the Committee and several undoubted Judges having expressed themselves to the owner in high terms on the latter quality; colour bright and correct in every point, *and breast, thighs, legs, and rump perfectly black*; was entered at the unsaleable price of £100, but might have been sold at the Exhibition and since for nearly half the number of pounds which his successful rival brought shillings; was the first-prize chicken at the last Birmingham Show, where the same two Judges gave him the Silver Cup and all the honours in their power.

Having trespassed to so great a length on your space, I will only further ask the Judges one or two questions. Have we been wrong in our notions of what a Partridge-feathered cock should be? is it not necessary to have the bright plumage, *black breast, thighs, and legs*, so long coveted? and are we, against the next gathering at Birmingham, to prepare for competition only such nondescripts as the bird highly commended by you in the late Exhibition at Liverpool? By their replying to these questions they will much oblige, not only myself, but many other admirers of this beautiful breed.—CONSISTENCY, *Liverpool*.

PIGEONS.

CLASS No. 3.—TUMBLER PIGEONS (*Columba revolvens*).

French.

German.

PIGEON CULBUTANT.

TUMMLER, or BURZEL TAUBEN.

THIS class of Pigeons are distinguished from all others by their revolving or turning a summersault backwards in the air while flying. They are very widely diffused, and there are several varieties of them. All, however, are very docile or easily tamed, light fliers, have pearl irides, and their beaks, though varying much in length, have a similarity of form, and I have noticed a tendency in most of the varieties to throw birds with white pinions and a white mark under the beak. As a race they are very prolific.

VARIETY 1.—THE COMMON EUROPEAN TUMBLER.



This variety is very plentiful in Germany, Holland, and France, and I believe universally to be met with in most parts of the Continent. They are about the size of a Dove-house Pigeon, but of a rather different build, and a more gentle and less wild expression; neither is the beak so much Dove-shaped or depressed in the middle. They are good breeders and attentive nurses. They fly well and tumble much. I believe this is the breed that is now often sold in England as Rollers, so called from their excessive tumbling

or rolling over so many times as they fly. In comparison with our finer-bred English Tumblers they are coarse, mousey, or jowler-headed, as the fanciers term it, that is to say, the beak longer and the forehead less raised. They are clean-footed, though some of the Dutch have small feathers on the feet. In plumage they are very various, possessing all the known shades and colours of domestic Pigeons. Some are whole-coloured, but the greater portion are black, blues, or reds, with white flights. Others, also, have white tails, and often a small white splash under the beak. There are also mottles, grizzles, haggles, splashed, and pided, as magpied, or white with dark heads and tails, called in Germany *Die Kappen Burzel Taube*. Like all other fancy Pigeons the more regularly they are marked, and the more accurately they are bred, and bred to the particular marking, the more they are esteemed.

KENDAL POULTRY SHOW.

THIS was held at Kendal on the 6th and 7th instant. T. Challoner, Esq., Judge, who awarded the prizes as follows:—

SPANISH.—A SILVER CUP for the best pen of Spanish, the gift of George Carr Glynn, Esq., Member for Kendal.—Cup and First, J. Tate, Preston. Second, Capt. W. W. Hornby, R.N., Knowsley Cottage, Prescott. Third, G. A. Gelderd, Aikrigg End, Kendal. Highly Commended, J. Dixon, North Park, Horton, Bradford; Mrs. L. C. Wells, 4, Albion Cottages, Brunswick Square, Camberwell, London. (Very good class.) *Chickens of 1856.*—First, J. Horrocks, jun., Ribblesdale Place, Preston. Second, Capt. W. W. Hornby, R.N., Knowsley Cottage, Prescott. Third, T. Robinson, The Gill, Ulverston. Highly Commended, G. A. Gelderd, Aikrigg End, Kendal; J. Dixon, North Park, Horton, Bradford; J. Tate, Preston. Commended, J. Mashiter, King Street, Ulverston.

DORKING (Coloured).—A SILVER MUG for the best pen of Dorkings, the gift of the Hon. Col. Upton, C.B., Levens Hall.—Mug and First, G. A. Gelderd, Aikrigg End, Kendal. Second, W. Wright, West Bank, Widnes, near Warrington. Third, J. Robinson, Vale House, Garstang. Highly Commended, E. Owen, Kendal; Capt. W. W. Hornby, Knowsley Cottage, Prescott. Commended, R. Sergencson, 8, Chester Street, Liverpool. *Chickens of 1856.*—First, J. Gelderd, Aikrigg End, Kendal. Second, J. Robinson, Vale House, Garstang. Third, J. Tate, Preston. Highly Commended, G. A. Gelderd, Aikrigg End, Kendal; A. Watkin, Freedom Cottage, Walkley, Sheffield. Commended, H. Cragg, Kendal; G. C. Whitwell, Tolson Hall, Kendal; W. W. Ruttlidge, Storthend, Kendal.

DORKING (White).—First, J. Robinson, Vale House, Garstang. Second, Miss M. Jackson, Vale House, Garstang. *Chickens of 1856.*—First, J. Robinson, Vale House, Garstang. Second, J. Whitwell, Kendal.

COCHIN-CHINA.—A SILVER CUP for the best pen of Cochin-China, the gift of the Hon. H. C. Lowther and Lord Bective, the Members for the County, W. Wright, West Bank, Widnes, near Warrington.

COCHIN-CHINA (Cinnamon and Buff).—First, T. Burnett, Hutton, Preston. Second, G. A. Gelderd, Aikrigg End, Kendal. *Chickens of 1856.*—First, T. Burnett, Hutton, Preston. Second, J. Gelderd, Aikrigg End, Kendal. Commended, R. Sergencson, 8, Chester Street, Liverpool.

COCHIN-CHINA (Brown and Partridge-feathered).—J. Bell, Kirkgate, Thirsk. *Chickens of 1856.*—First, W. Wright, West Bank, Widnes, near Warrington. Second, J. Bell, Kirkgate, Thirsk.

COCHIN-CHINA (White or Black).—First, J. M. Barnes, Levens. Second, W. Wanklyn, jun., Bury, Lancashire. Commended, C. Gandy, Oakland. *Chickens of 1856.*—First, T. Burnett, Hutton, Preston. Second, R. Teebay, Fleetwood, near Preston. Highly Commended, W. Wanklyn, jun., Bury, Lancashire; A. Watkin, Freedom Cottage, Walkley, Sheffield.

GAME.—A SILVER CUP for the best pen of Game, the gift of Geo. A. Gelderd, Esq., of Aikrigg End, Kendal—Capt. W. W. Hornby, R.N., Knowsley Cottage, Prescott.

GAME FOWLS (White and Piles).—First, Capt. W. W. Hornby, R.N., Knowsley Cottage, Prescott. Second, W. Wilkinson, Lyth, Levens. Third, H. Rauthmell, Old Hutton, Milnthorpe. Highly Commended, F. Atkinson, Lord's Plain, Levens. *Chickens of 1856.*—First, W. Wilkinson, Lyth. Second, F. Atkinson, Lord's Plain. Third, Rev. T. E. Abraham, Bickerstaffe, Ormskirk. Highly Commended, N. Dixon, Helsington, Levens. Commended, R. Atkinson, Bradleyfield, Kendal.

GAME FOWLS (Black-breasted and other Reds).—First, Capt. W. W. Hornby, R.N., Knowsley Cottage, Prescott. Second, J. Hindson, Barton House, Everton, Liverpool. Third, T. W. Pearce, Bedford, Beds. Highly Commended, J. J. Banks, Kent Cottage, Kendal; G. W. Moss, Bank, Liverpool; Mrs. H. Sharp, Bradford; T. Robinson, The Gill, Ulverston. Commended, T. E. Atkinson, Bradleyfield, Kendal; J. Robinson, Kitching, Kendal; T. Burnett, Hutton, Preston. *Chickens of 1856.*—First, T. Baron, Kendal. Second, H. Cragg, Kendal. Third, W. Bownass, Royal Hotel, Bowness. Highly Commended, J. Fawcett, Eskrigg End, Old Hutton; R. Pickthall, Mint House, Kendal; M. Redhead, Kendal; F. Atkinson, Lord's Plain, Levens; E. Swainson, Nibthwaite, Ulverston. Commended, R. Gelderd, Soutergate, Ulverston.

GAME FOWLS (any other variety).—First, H. Rauthmell, Old Hutton

Milnthorpe. Second, Mrs. J. Burnett, Hutton, Preston. Third, J. Tate, Preston. Highly Commended, F. Atkinson, Lord's Plain, Levens. Commended, R. Pickthall, Mint House, Kendal. *Chickens of 1856.*—First, W. Wilkinson, Lyth. Second, T. W. Jones, Portland Cottage, Wellington, Salop. Third, Mrs. H. Sharp, Bradford. Highly Commended, J. Barrow, Commercial Hotel, Kendal; H. Rauthmell, Old Hutton, Milnthorpe.

HAMBURGHS.—A SILVER CUP for the best pen of Hamburg Fowl, the gift of R. L. Watson, Esq., of Eccleirigg, Windermere—Bird and Beldon, Eccleshill Moor, Bradford.

HAMBURGH (Golden-pencilled).—First, Mrs. R. Sergencson, 8, Chester Street, Liverpool. Second, H. Cragg, Kendal. *Chickens of 1856.*—First, Mr. D. Harrison, Singleton Park. Second, Mrs. H. Sharp, Bradford. Highly Commended, J. Horrocks, jun., Ribblesdale Place, Preston; A. Gregg, Stramongate, Kendal.

HAMBURGH (Golden-spangled).—First, W. W. Ruttlidge, Storthend, Kendal. Second, T. Robinson, The Gill, Ulverston. Highly Commended, J. Rooks, High Barn, Milnthorpe. *Chickens of 1856.*—First, Miss M. Jackson, Vale House, Garstang. Second, W. W. Ruttlidge, Storthend, Kendal. Highly Commended, J. Dixon, North Park, Horton, Bradford; J. Rooks, High Barn, Milnthorpe. (Very good class.)

HAMBURGH (Silver-pencilled).—First, Mrs. S. Dixon, North Park, Horton, Bradford. Second, W. Wright, West Bank, Widnes, Warrington. Commended, S. Taylor, Ibbotsholme; Mrs. H. Sharp, Bradford; Bird and Beldon, Eccleshill Moor, Bradford. *Chickens of 1856.*—First, Mrs. S. Dixon, North Park, Horton, Bradford. Second, Mrs. H. Sharp, Bradford. Highly Commended, Bird and Beldon, Eccleshill Moor, Bradford.

HAMBURGH (Silver-spangled).—First, Bird and Beldon, Eccleshill Moor, Bradford. Second, H. Sharp, Bradford. Highly Commended, Mrs. S. Dixon, North Park, Horton, Bradford; Mrs. J. Burnett, Hutton, Preston. *Chickens of 1856.*—First, Bird and Beldon, Eccleshill Moor, Bradford. Second, Mrs. J. Burnett, Hutton, Preston. Highly Commended, Miss M. Jackson, Vale House, Garstang; H. Sharp, Bradford.

POLAND FOWL.—A SILVER CUP for the best pen of Poland Fowl, the gift of the Managing Committee—C. S. Dixon, North Park, Horton, Bradford.

POLAND FOWL (Black with White Crests).—No entry. *Chickens of 1856.*—No entry.

POLAND FOWL (Golden).—First, C. S. Dixon, North Park, Horton, Bradford. *Chickens of 1856.*—Second, C. S. Dixon, North Park, Horton, Bradford.

POLAND FOWL (Silver).—First, C. S. Dixon, North Park, Bradford. Second, J. Hill, Selly Oak, Birmingham. *Chickens of 1856.*—First, C. S. Dixon, North Park, Horton, Bradford. (Second prize withheld.)

SINGLE COCKS.

SPANISH.—First, M. Graham, Wildman Street, Kendal. Second, G. W. Hartley, Stricklandgate, Kendal. Highly Commended, H. Cunningham, Meal Bank, Kendal. Commended, A. Watkin, Freedom Cottage, Walkley, Sheffield. (Extraordinarily good class.)

DORKING.—First, T. Ullock, Quarry Howe, Windermere. Second, J. Gelderd, Aikrigg End, Kendal.

COCHIN-CHINA.—First, W. Wanklyn, jun., Bury, Lancashire. Second, R. Farrer, Angel Bank, Bolton-le-Moors. Highly Commended, Mrs. J. Burnett, Hutton, Preston.

GAME.—First, H. Rauthmell, Old Hutton, Milnthorpe. Second, Wm. Bownass, Royal Hotel, Bowness. Highly Commended, N. Dixon, Hel-sington, Levens; H. Cragg, Kendal. Commended, G. Cockerton, Cartmel Fell, Newton.

BANTAMS (any variety).—First, W. Wright, West Bank, Widnes, Warrington (Gold-laced). Second, W. Wright, West Bank, Widnes, Warrington (Silver-laced). Third, R. Blackburn, 294, North Road, Preston (Gold-laced). Highly Commended, W. Bell, Low Green-riggs, Underbarrow (Gold-laced); C. S. Dixon, North Park, Horton, Bradford; W. Wanklyn, jun., Bury, Lancashire (Gold-laced); J. Jackson, King's Arms Hotel, Kendal (Gold-laced).

GESE.—First, W. Talbot, jun., Lane House, Burton. Second, J. J. Banks, Kent Cottage, Kendal.

DUCKS.—A SILVER CUP for the best pen of Ducks, the gift of John Whitwell, Esq., Mayor of Kendal—H. Cragg, Kendal.

DUCKS (Aylesbury).—First, Mrs. S. Dixon, North Park, Horton, Bradford. Second, J. Abbott, Kirkland. Highly Commended, J. Pickthall, Mint House, Kendal. Commended, Mrs. R. Sargencson, 8, Chester Street, Liverpool.

DUCKS (Rouen).—First, H. Cragg, Kendal. Second, Mrs. R. Sargencson, 8, Chester Street, Liverpool. Highly Commended, G. A. Gelderd, Aikrigg End, Kendal. Commended, G. C. Whitwell, Tolson Hall, Kendal; T. W. Pearse, Bedford, Beds.

TURKEYS.—No entry.

PIGEONS.

CARRIERS.—First, W. Jackson, Bolton-le-Sands. Second, T. Kew, Dale House, Burton-in-Kendal.

ALMOND TUMBLERS.—First, G. W. Hartley, Stricklandgate, Kendal. Second, T. Kew, Dale House, Burton-in-Kendal.

JACOBS.—First, Mrs. Barnes, Vicarage, Kendal. Second, T. K. Atkinson, Cardew Lodge.

FANTAILS.—First, W. Jackson, Bolton-le-Sands. Second, H. Child, jun., Sherbourne Road, Birmingham.

TUMBLERS.—First, I. Monkhouse, Kendal. Second, T. Kew, Dale House, Burton-in-Kendal.

POWTERS OR CROPPERS.—First, Mrs. A. Monkhouse, Kendal. Second, T. Kew, Dale House, Burton-in-Kendal.

ANY OTHER BREED.—First, J. W. Edge, Aston New Town, Birmingham (Victoria). Second, Mrs. A. Monkhouse, Kendal (not described).

OUR LETTER BOX.

HEN'S NESTS (*A Subscriber*).—A three-sided 15-inch square box, with a sloping hinged lid, and a ledge six inches high at the bottom of the open side, is as good a form as you can have. We like nests on the ground, and we employ for the nest itself straw cut into inch lengths by a chaff-cutter. Heath cut into short lengths would do as well.

BREAST OF THE GOLDEN-SPANGLED HAMBURGH COCK.—"You will much oblige if you will inform me what part of a Golden-spangled Hamburg cockerel ought to be marked with spangles; and also whether they are ever self-coloured on the breast."—J. L.

[The Gold-spangled Hamburg cock should be spangled on the back and breast. The hackle and saddle should also be marked with black. The wings should be laced and barred. In the Yorkshire schools it is taught that a black breast is desirable. The Southrons require it spangled as accurately as possible. We have there seen many black, but no other self-colour. The breast of the *Pencilled* cock is self-coloured, and spangling is there a defect.]

BREAST OF GOLDEN-SPANGLED HAMBURGH COCK.—This ought to be spangled. Where two good hens are shown correct in their plumage, and slate-coloured legs, well and distinctly barred on the wing, and a good cock to match, double comb, erect, &c., white deaf ears should always be a desideratum. Yet I had a Black-breasted Golden-spangled Hamburg cock which won me seven prizes as a single specimen. He was also shown with two good hens, well spangled and correct in marks, &c., and out of six Shows the pen won three first and one second prize.—EDWARD TINDALL.

HACKLE OF SPANISH FOWLS.—"Are two or three hackle feathers in the neck of a Spanish cock, of a reddish yellow, detrimental to it as a show bird? What are considered as the qualifications for a winner."—W. Good.

[The feathers you mention would be more than detrimental to a show cock—they would be fatal to his success. At the same time it is but fair to tell you it is a very common occurrence, and all cocks of black plumage are subject to varied feathers. It is anomalous, but, as in the black Cochins, the hens are invariably true, while the cocks are uncertain. It is no sign of impurity.]

PACKING EGGS (*W. B.*).—Pack your eggs in a basket shaped like an inverted cone. Roll each in some moss, and fill up all spaces with the same wadding, or wool will do as well. The black and white feathers you inclose are frequent accidents in the moulting of Spanish fowls. Your hen is not a whit less pure or less to be depended upon for breeding.

CHARACTERISTICS OF BLACK SPANISH (*A Subscriber*).—It is quite impossible to decide from mere description, but under any circumstances, if we were in your position, we should place the cock purchased with one lot with the hens purchased with the other lot, and *vice versa*. You will soon have such a reference as you ask for.

FOWLS DROPPING THEIR EGGS (*Idem*).—There is excessive excitement of the egg passages. Put those who do so upon low diet, boiled rice and potatoes, and give them a pill containing one grain of calomel and one-twelfth of a grain of tartar emetic. As in your opinion your hens are "fat enough," in other people's opinion, be assured, they are "too fat." Give them less food.

LONDON MARKETS.—FEBRUARY 16TH.

COVENT GARDEN.

The scarcity of the crop of Apples and Pears last year begins to tell upon the markets in the high prices realised for what can only be called fair samples of home growth, and it is only from the large importations of the former article that half the households in Great Britain have any to use. Good Pears now fetch from 8d. to 1s. each. Continental produce otherwise consists of *Salading* of all sorts, and a few *Globe Artichokes*. The *Potato* markets are heavy, and it is only first-rate samples that maintain their price. We hear of large arrivals since the frost has broken up.


POULTRY.

There has been but a moderate supply of poultry during the past week. It has closed the legitimate season for the sale of game, and that will cause an increased consumption.

Large fowls. . . 5s. 0d. to 6s. 0d. each.	Wild Ducks . . . 2s. to 2s. 6d. each.
Smaller do. . . . 4s. to 4s. 6d. "	Woodcocks 3s. 6d. to 4s. 0d. "
Chickens. . . 2s. 9d. to 3s. 3d. "	Snipes . . . 0s. 0d. to 1s. 9d. "
Ducklings. . . 3s. 6d. to 3s. 9d. "	Plover 1s. 9d. to 2s. "
Goslings . . . 7s. 6d. to 8s. 6d. "	Larks . . . 1s. 6d. to 1s. 9d. per doz.
Guinea Fowls 2s. 6d. 3s. 6d. "	Pigeons 10d. to 11d. each.
Hares 0s. 0d. to 0s. "	Rabbits . . . 1s. 5d. to 1s. 6d. "
Teal 2s. 0d. to 2s. 6d. "	Wild ditto . . . 10d. to 11d. "

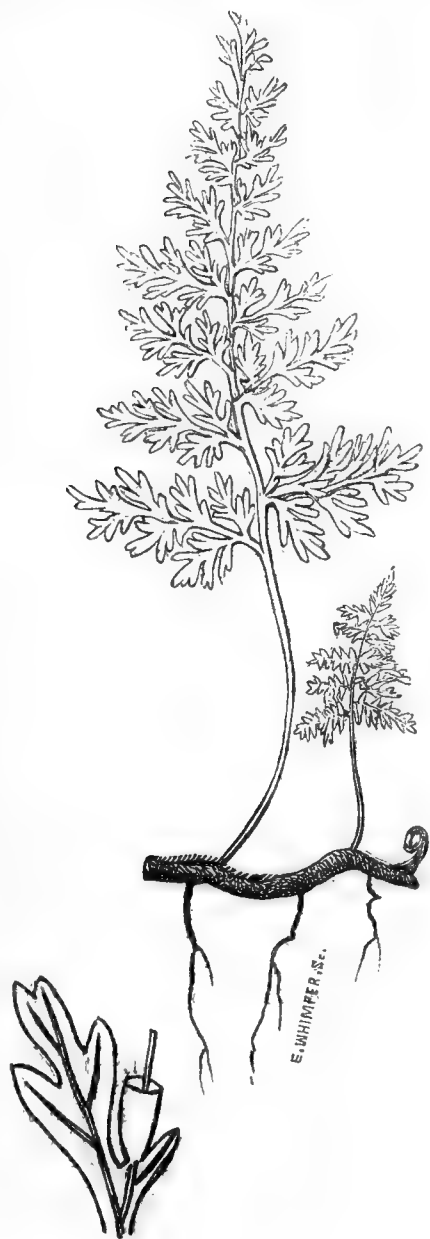
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WEEKLY CALENDAR.

		WEATHER NEAR LONDON IN 1856.										
D M	D W	FEB. 24—MARCH 2, 1857.	Barometer.	Thermo.	Wind.	Rain in Inches.	Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
24	TU	SHROVE TUES. ST. MATTH.	30.558—30.362	50—25	S.W.	—	VI	29 a. 5	sets.		13 26	55
25	W	LENT BEGINS, ASH WED.	30.467—30.406	47—41	S.W.	—	56	31	7 a 3	1	13 17	56
26	TH		30.369—30.314	57—45	W.	01	54	33	8 31	2	13 7	57
27	F		30.473—30.369	51—42	N.W.	—	52	34	10 0	3	12 56	58
28	S		30.483—30.463	49—36	N.	01	49	36	11 32	4	12 45	59
1	SUN	1 SUNDAY IN LENT,	30.606—30.584	44—40	N.E.	01	VI	v	morn.	5	12 33	60
2	M	Small Henbit (Veronica).	30.569—30.555	46—37	N.E.	—	45	40	1 1	6	12 21	61

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 44.5°, and 33.5°, respectively. The greatest heat, 64°, occurred on the 28th, in 1846; and the lowest cold, 18°, on the 1st, in 1854. During the period 103 days were fine, and on 93 rain fell.

TRICHO'MANES BREVISE'TUM.



THIS has been commonly included in the genus *Trichomanes*, but with the various specific names of *radicans*, *speciosum*, *Europæum*, *alatum*, *pyxidiferum*, *Tunbridgense*, var. β , and *Andrewsii*. By a few botanists it has been called *Hymenophyllum alatum*, *Hymenophyllum Tunbridgense*, β , and *Didymoglossum alatum*. In English it is known as the *Short-styled Bristle Fern*, and *Cup-Goldy-locks*.

Root very thick, cylindrical, creeping, black, densely hairy, with numerous stout, scattered, branched, vertical rootlets. *Fronds* issuing singly, irregularly, from the upper side of the root; erect, from five to twelve

inches high, dark, transparent green, narrow egg-shaped in general outline. *Stem* winged, and from one-fourth to one-half bare of leaflets. *Leaflets* with two leaflets at their base, and their upper portion irregularly but alternately lobed. Both leaflets and lobes cut into deep, blunt segments. A few of the upper segments end in a single, imbedded, oblong, cylindrical cup, continued from the leaf, slightly winged at the sides. *Fructification* round the bottom of a little column in that cup.

This very rare Fern is found in watery places, and on wet rocks.

In *England* it has been found at the head of Elm Crag Well, at Belbæk, half a mile from Bingley, Yorkshire.

We are not aware that it has been found either in Wales or Scotland.

In *Ireland* it is more common, being found at Powerscourt Waterfall and various parts of Kerry; on shady banks and rocks exposed to the spray of the waterfall above Turk Cottage, Killarney, growing with the equally rare *Jungermannia Hutchinsiae*; Hermitage, in the county of Wicklow; Ballinhasy Glen, near Cork; and Glendine, near Youghal.

It is first mentioned as a British Fern by Dillenius in the third edition of Ray's *Synopsis*, published in 1724. He states that it was found by Mr. Richardson at Belbank, and it has been found there since. The copper plates given by Dillenius establish the identity beyond any doubt, even if his description were not sufficient for doing so. *Filix humilis repens, foliis pellucidis et splendentibus, caule alato* (Dwarf Creeping Fern, with transparent and shining leaves, and with winged stem).

This Fern, Mr. W. Reeve informs us, is one of the more delicate of the British Ferns. When successfully grown it is one of the most interesting of the smaller species. It is useless to attempt to cultivate it upon an exposed situation, it being so partial to a close, calm, moist, and warm atmosphere, and when once dislodged from its native place it is very difficult to establish it otherwise than with these conditions. It may be successfully grown in a pot by first filling a middling-sized pot one-third full of finely-broken potsherds or sandstone, putting upon this a layer a little finer, and filling the remaining space with a compost of fine loam, silver sand, and finely-powdered sandstone in equal parts. This is to be pressed firmly together, and then arrange the caudex or main root very carefully upon the surface, fixing it by means of a few very small hooked pegs—

the smaller in size and quantity the better. Then strew a little sand and powdered stone over the surface, just enough to cover and settle the roots. This being done, the whole is to receive a liberal watering from a very fine-rosed watering-pot, and left for a short time to settle. Place the pot in a saucer, the top of which is to be below the level of the top of the first layer of stone in the pot. This saucer is to be kept full of water, with a bell-glass turned over the pot, and to rest in the saucer of water. Place the whole in a warm greenhouse or stove, and by keeping the saucer filled with water success may be relied upon. Similar directions may be followed for cultivating this Fern upon a larger scale. Be careful always to keep the atmosphere moist and warm, which moisture will be secured by keeping the pan full of water. This Fern may be increased by division, although very shy of this process, and also by its seed, or fructification, which is, perhaps, the best, although this Fern is very delicate and tender in a young state.

WE have had many applications for the particulars of a recent decision of the Court of Queen's Bench relative to the right of a clergyman, and of his executors after his decease, to remove a hothouse erected by him in the rectory garden during his incumbency. We were unwilling either to publish this decision, or to make any comment upon it, until we had not only obtained a report of the case from a legal authority, but had communicated with some of the professional gentlemen engaged in the suit. This care we thought necessary, because any mistake might mislead some of our readers into unwarranted litigation.

Having obtained the authorities and information we required, we may epitomise the effect of the decision thus:—

The executors of a deceased rector may remove hothouses erected by such rector in the rectory garden, and entirely detached from the rectory house. Such hothouses are not necessary for the enjoyment of the rectory, but are only a matter of luxury and ornament, which the deceased rector might have pulled down during his life.

We publish the following full particulars from *The Weekly Reporter*:—

MARTIN AND ANOTHER, EXECUTORS OF MATTHEWS v. ROE.

This was a special case, stated without pleadings, for the opinion of this Court. The facts were, that the Rev. J. J. Matthews, being incumbent of Melbury Osmond, in Dorsetshire, had during his lifetime erected in the rectory garden, on a spot entirely detached from the parsonage house, two hothouses, respectively 52 and 47 ft. in length, by 14 in width, consisting of low brick walls, upon which mortar was spread; imbedded into this mortar were wooden frames and glass work, the glass work sliding up and down upon pulleys and not fixed. The plaintiffs, his executors after his death, removed this frame and glass work; took it from the mortar on which it was placed, doing no damage thereby except what was unavoidable to the mortar. The defendant, who has succeeded as rector, afterwards took the materials from the possession of the plaintiffs, claiming them as belonging to him as such rector; and the question

for the Court was simply, and without any question as to time and manner and form of removal by the plaintiffs, which of the two parties was entitled to the property and the materials so removed.

Barstow, for the plaintiffs.—These hothouses were proved to be no part of the rectory house, but they were at some distance off. The incumbent of a rectory is not like a tenant for life, for the fee simple is in abeyance, and the late rector could have at any time removed these erections without being guilty of waste: *Huntley v. Russell*, 13 Q. B. 588. If the property became the defendant's at the decease of the preceding rector, he must repair it during his incumbency, and transmit it to his successor in good repair; but can it be said that such an erection as a hothouse, which is simply for the purpose of luxury, was a thing that the successor was bound to take, and be liable in an action for not repairing? *Wise v. Metcalfe*, 10 B. & C. 299, is an authority for saying that this obligation only extends to what is useful. As to the brickwork, that became a part of the rectory, and the plaintiffs would be liable in an action for dilapidations for any injury done in removing the hothouses. The case finds that no damage was done, which must mean, no more damage than could be helped. The real question is, whether the successor could be compelled to keep this structure in repair: it is submitted he could not, because it was an erection for the convenience of the then incumbent, and not for the advantage of the ecclesiastical property. (*Culling v. Tufnell*, B. N. P. 34; *Wansbrough v. Maton*, 4 A. & E. 884; *Buckland v. Butterfield*, 2 B. & B. 54; *Grymes v. Boweren*, 6 Bing. 437, were referred to and distinguished.)

Petersdorff, for the defendant.—This was a permanent building fixed to the ground; the wall clearly passed with the rectory, and the frame work of the hothouses was so fixed in the wall that it could not be taken away without altering the whole structure. *Prima facie* this was a building beneficial to the rectory, and which passes to the incumbent. [COLERIDGE, J.—If you can claim this building you would be bound to transmit it in proper repair to your successor, and therefore it would become liable to the question of dilapidations.] It cannot be denied that if the present rector claims the building he must repair it, or be liable for neglect in an action for dilapidations. All the cases which have been decided between tenants for life and remainder men apply here. [LORD CAMPBELL.—They are material, but not conclusive.] Next, does the taking the buildings subject the present incumbent to any unreasonable incumbrance? The case does not find that it would, and therefore it cannot be presumed that the building would not be advantageous to the ecclesiastical property.

Barstow, in reply.—This erection might perhaps be a fixture as between tenant for life and remainder men, but here the late and present incumbent are in the condition of successive tenants for life, upon each of whom duties are imposed.

Cur. ad. vult.

LORD CAMPBELL, C. J. (Jan. 24), delivered the judgment of the Court. His Lordship, after stating the facts, said—In considering this question, we treat the removal by the plaintiffs as having been in fact effected without injury to the freehold. In all cases of this kind injury to the freehold must be spoken of with less than legal strictness. A screw or nail can scarcely be drawn without some injury, and when all the harm done is that which is unavoidable to the mortar laid on the brick walls, this is so trifling, that the law, which is reasonable, will regard it as none. Upon any other principle, the criterion of injury to the freehold would be idle. We have found no decision or authority in any text-book precisely governing this case; and we consider it, therefore, on a principle. In the first place, it seems clear that had the testator, in his life time, done what the plaintiffs have done since his death, the defendant would not have a claim for dilapidations. The character of the building would have justified the incumbent in the removal of the whole of it, only he must have restored the garden to its former condition if in the removal he had occasioned any injury to it amounting to waste; for the duties of the present and the right of the succeeding incumbent as such are clear. As to a matter of needless expense or luxury or ornament by which the present incumbent has gratified his own taste, he is not only not bound, but he ought not to

transmit it to his successor. If his successor may recover damages from an executor for a removal of such buildings by the testator, then there can be no doubt that he, in his turn, must maintain, and if he must maintain, he must also restore and rebuild in case of decay, so that the benefice might thus ultimately become permanently saddled with a useless burden. Hothouses, pineries, and conservatories, do not in this respect differ from observatories, menageries, or aviaries. The parsonage and the glebe are for the decent and suitable residence and sustenance of the incumbent, and are to be maintained according to the intention of the law out of the revenues of the benefice. This parsonage the succeeding incumbent is entitled to receive from his predecessor of such convenience and character as he finds it, and in as good condition—properly repaired or even rebuilt if by his neglect it has become damaged; the glebe buildings to be in good repair and order; and, in fact, whatever he is so entitled to receive he must transmit; and the extent to which, in any particular case, a reciprocal right and duty exist must be determined by a liberal and sensible consideration of the circumstances. It is impossible from the nature of the thing to lay down a more precise rule. Therefore, cases may occur which are near the dividing line, and so present a practical difficulty; but what we have to deal with, namely, hothouses, nearly 70 feet in length, present none. The testator did an unnecessary, and probably a very unwise and unsuitable act in erecting them; and when he had done so there was a *locus penitentiae*; nothing prevented him from removing at once all that was mere fixture, and that is all we need decide now, though, as we have already intimated our opinion, we should have no difficulty in deciding, if necessary, that he might have removed the whole of the structure. Thus far on the strict law of dilapidations by which a deceased incumbent is always supposed to have committed a wrong, for which, from the peculiar nature of the holding and of the property, there was no one who could sue him; but for which, by custom and contrary to the general rule of law, an action would lie against his personal representative; and it is only with reference to this law of dilapidations that our previous remarks must be considered as made. It is, of course, a different, and perhaps a more difficult question, whether, if the incumbent at his death leave entire on the glebe and in good repair an erection which he might himself have removed, the executors may, within a reasonable time after his death, remove such parts of it as are in the nature of fixtures, though capable of removal without injury to the freehold. The case now supposed is that of an erection respecting which, if the deceased had left it out of repair, his successor could not have maintained any action for dilapidations, which he himself would not be bound to keep in repair, which imposed no burden on him, and which he might have removed; for it would be unreasonable to hold that he might not remove what might be useless or unsuitable to the living, or even inconvenient to the occupation of the parsonage or glebe, and which for any one of these reasons he was not bound to keep in repair. The question thus stated clearly stands apart from the peculiar law of dilapidations. It has no reference to the character of the testator as incumbent of the benefice; or to the relation between him and the defendant as predecessor and successor to the same incumbency. The testator has committed no waste, either voluntary or permissive; he has left on the glebe that which he might have removed, and which being left imposes no duty on his successors: it is that which, if he had himself severed from the freehold, would clearly have reverted to his personal estate, and gone to his personal representative; but he has by his dealing, as the case states, so united it to the freehold and annexed it inseparably to it, that it is no longer part of his personal estate. Messrs. Amos and Ferrard in their excellent book on *The Law of Fixtures*, say it may, they conceive, be laid down that the incumbent or his executor will in general be entitled to fixtures of the same description as those which formed part of the personal estate of a deceased tenant for life. It may be worth observing, that there is this distinction between an incumbent and an ordinary tenant for life: the former has at no time any reversion to any present interest or rights; whereas, when the latter annexes anything to the freehold, or in any way meddles with it, he

annexes to, or meddles with that in which some other person or persons has or have, at the moment, an existing interest, which may be increased or decreased in value by what he does, and which the law will protect. But neither the patron of the benefice nor the future unknown successor had any such interest in the parsonage or glebe. If any one is entitled here it is the ordinary; and he is not so in respect of any interest vested in him, but derived from the general public object of the endowment of the clergy. There seems a reason for enlarging the rule as between an executor and successor, where the subject matter in dispute is not of a kind that can be considered as inalienably attached to the benefice, for in such a case there would be no ground even for the interference of the ordinary. Suppose the case of an observatory, which an incumbent having built has taken down again; it would be absurd to talk of the ordinary proceeding to prevent it. When, however, the cases between an executor and tenant for life or remainder man are looked into, they will be found to turn each on its particular circumstances; the character, the size, the mode of attachment, the facility of severance, and the injury to the freehold by severance. With regard to an ecclesiastical benefice, the character and object of the building to which the chattel is attached, and the mode in which it has been so attached, seem of very great consequence in determining whether there was any intention to separate it permanently and irrevocably from the personal estate. Here there is an erection in itself purely a matter of luxury and ornament, which the testator might have pulled down, but which he, probably wishing to enjoy so long as he lived in the benefice, did not remove; to this, and for the purpose of completing the luxurious or ornamental occupation, a chattel is so attached that it may be detached without injury to the freehold. We think the inference is, that it never ceased to be a chattel during the testator's life; that it continued to be so at the moment of his death; and therefore passed as personal estate. Had this chattel been merely screwed, or had it been as a telescope in an observatory strongly screwed, as such instruments commonly are to what is part of the building itself, we think no question could have been raised; and this seems to us to present no substantial difference from an observatory. Our judgment therefore will be for the plaintiffs.

Judgment for the plaintiffs.

Let no one strain this decision beyond its real conclusions. It does not decide that *every* hothouse, or greenhouse, or conservatory erected by an incumbent on the premises of his living during his incumbency may be removed either by himself or by his executors. The decision does not justify such a conclusion as that. For example, if the hothouses had been attached to the rectory house by timber let into its walls; if doors and windows from that rectory opened into the hothouses; and if competent surveyors stated that the rectory house would be of less annual value after the removal of the hothouses, then, as in the case of *Buckland v. Butterfield*, decided by the whole Court of Common Pleas in 1820, in the case of a tenant for years, with remainder of the premises to him for life, it is doubtful if either the rector or his executors would be allowed to remove such hothouses.

THE Anniversary Meeting of THE ENTOMOLOGICAL SOCIETY was held on the 26th of January. The whole of the Society's officers were re-elected, and its funds shown to be in a flourishing condition. The February Meeting took place on the 2nd instant, of which we will give a full report next week.

LOOKING AROUND US.

AIR GIVING.—Our friend Mr. Beaton, with a mere dash of his pen, stating that "warming the air inside greenhouses and pits by the heat of the sun in winter is philosophy derived from the moon," has stirred a hornet's nest, and sent them humming about my ears. Some men advocate a great truth in such a simple, easy manner that people pass along and fail to recognise anything particular at all about that truth, while another man, by a more happy, startling phraseology, manages to rivet upon it general attention. A "moon's philosophy" will cause many to inquire whether their theories of action are, after all, anything but *moon-struck* fancies. Our friend's *startler* will, therefore, be of great benefit, independently of the soundness of the conclusions arrived at from certain premises and circumstances. In some previous directions upon air giving, upon which I cannot now lay my hands, I believe that my conclusions, when they seem to differ from Mr. Beaton's, were yet perfectly in unison with the premises and circumstances of the case. We should perfectly agree where the object was merely to preserve plants; we should seem to differ when growing and flowering were the object, and that especially when economy must occupy a primary consideration, as we fear it now does in nine cases out of every ten. In the first case I would carry out our friend's idea to the letter, and as much as possible avoid shutting up an atmosphere high in temperature and saturated with moisture. In the other case I would just be as careful to keep out a cold, dry air that would rob the plants of their moisture, and therefore take means, by giving air at the top of the house in such circumstances, to insure the heating and the moistening of the fresh, cold, dry air before it got among the plants. There can be no question of the extreme propriety of leaving air on continually in cold pits, so that the temperature does not get below the point of safety. It would be desirable in conservatories and forcing houses to leave air on as long as possible, nay, to leave a little on continually, provided that lighting fires in an afternoon or keeping them burning all day was a mere nothing considered economically, and care was taken that such firing did not dry the atmosphere too much, and thus send it to suck moisture for itself from soil and foliage. My observation would lead me to conclude, that in the case of growing and flowering plants in conservatories and greenhouses, where the average night temperature in moderate weather ranges from 45° to 48° and 50° , that giving air freely and late in very severe weather, and using dry heat in proportion, are more debilitating for the plants than less air and shutting up earlier with sunshine. Heated air *will have* moisture if possible. Heat from the sun is the most natural, and costs us nothing, while every visit to the furnace adds to the garden expenses. If not carried to an extreme, the lessening and shutting off most of the air early in the afternoon in sunshine in very severe weather will not elongate or weaken the plants. As a sort of guide I may mention that the heat of such an inclosed atmosphere in a sunny afternoon may range from 15° to 20° above what you wish your night temperature to be, and the fire heat should just catch it in time to prevent it getting too low. That less fire is needed than when the house is shut up much later, and after the house has got down to the requisite degree, I have no doubt at all, though I am open to conviction to the contrary. The heat inclosed, from whatever source derived, will equally be liable to decline by radiation. The inquiries made and hints given show that it is a matter of importance. Mr. Beaton may well, therefore, give us his ideas more in full, and our other coadjutors and other gardeners might well do the same, not forgetting the economical

view of the question. It would be well did we unite in giving a certain sound on this subject. Those friends who have drawn my attention to the seeming discrepancy between Mr. Beaton and myself will now see that, in cold houses for preserving plants, our practice would be the same; that in other houses requiring more heat I would follow his plan to a great extent, were there no questions about a heavy coal bill; but where economy must be consulted as well as the health of the plants, I would continue to borrow a little extra heat from the sun in the afternoon, and especially in cold, frosty weather.

PLANTS NEAR TO AND AT A DISTANCE FROM THE GLASS IN WINTER.—Some passing expressions on this subject have given rise to some inquiry and reflection. A correspondent tells us that, in order to have all advantages, he has contrived a small stage in his Melon pit, and that, by means of a winch and ratchet, he can raise this stage within fifteen inches of the glass, or sink it so as to be between two and a half and three feet from it. He finds that plants do best near the glass in dull, mild weather, and also in clear, frosty weather if great care is taken in protecting them; but that, having had plants nipped by a very sudden frost, he generally got them a little farther from the glass in frosty weather. Could such a plan be easily adopted, many amateurs would get out of a difficulty. As heat radiates from the walls, and especially from the glass, in straight lines, the farther the plants are from the radiating surface, the longer will it be before the atmosphere about them gets cooled injuriously. Hence plants on shelves near the glass have frequently been killed, while plants standing on the floor of the same house have been uninjured. "A. B." set his plants near the glass in a pit, on coal ashes, and lost many, while his neighbour, "C. D.," who had his plants on a stage in a similar pit and a good open space beneath the stage, lost none, because that air parted with its heat more quickly than the ashes, and the stage helped to keep the air in movement. If the plants had been placed lower down they would have been safer from frost, but more liable to injury from damp and a stagnant moisture. It is always safest to have plants in pits moderately near the glass, and covering in readiness, as, unlike plants grown in a house with light on all sides, and where nearness to the glass is not such an object, the plants in a pit receive, in general, light only from above. I recollect a case in point. Plants set on an earthy platform near the glass in a pit hardly escaped a sudden frost, though the glass was protected with double mats. Similar plants standing thick on the floor of a large house were not at all touched, though no fire had been used, and the whole of the glass was thickly crusted with hoar frost.

SNOW AS A PROTECTOR.—Two correspondents have had a discussion on this subject, and have referred the matter for decision, and if I cannot decide, some one else may help us. "C. D." had the roof of his house covered with snow, and he swept off what he could, and put on an extra fire to melt and get rid of the rest. "E. F." felt situated exactly alike, and he just used enough heat to keep all right and prevent the snow from melting, and thus had the advantage of a snow covering for several very frosty nights. Very likely both were right. The necessary coolness inside to keep the snow from melting, and the dark shade it would give, would be injurious to plants used to an average temperature of from 45° and upwards. Where the object was merely to preserve bedding plants, &c., and where the temperature might be 10° lower with safety, then, in point of economy, the keeping the snow on was a wise measure. There is no cheaper protector than snow. I have seen a man at his wits' end for litter in a sudden frost, and resolutely sweeping off every bit of snow from the glass, and from all around his cold pits, when he would have

acted much more wisely if he had pitched a quantity all over, and if round the walls so much the better. So much do I value snow as a protector, that, in the case of cold pits, whenever there is any likelihood of the frost continuing, I should prefer not uncovering to removing the snow. If these are allowed to remain covered up some time two things must be attended to. The first is, that even more covering must go above the snow if there is any danger of the temperature inside getting so low as to be injurious. The second is, making sure that the atmosphere inclosed is so cold that the plants will not grow, averaging somewhere about 35°, or a trifle more. If much above that, tilt the sashes behind without uncovering until the temperature is low enough, and that will also guard against damping. In the heat of the day a little air may thus be frequently given, which will keep the interior cool and sweet. Be it clearly understood, however, that such a long night, from covering up for days, for a week, or a couple or more of weeks, is only safe when the temperature of the atmosphere inclosed is sufficiently low to prevent any stimulus to growth. For this idea, on which I have long acted and frequently recommended, as well as for many more, I believe I am indebted to the earlier writings of Mr. Errington. If the frost continues, and the litter and snow are insufficient until more protecting material is secured, stir the surface often of what you have got, and that will break the line of radiation.

WATERING.—After saying so much in previous volumes, I allude to it here for urging the greatest care and nicety in applying it to all cold houses and pits. In winter we generally have too much rather than too little moisture. No plant should be watered unless it be dry, and that should be done so as not to spill a drop. Would that those who aspire to be gardeners would think of this. No wonder that many an experienced gardener feels his hat somewhat too small when, contrary to explicit directions, he finds the bottom of a pit and the floor of a house puddled with carelessly-dropped water.

QUANTITY OF DUNG FOR VARIOUS HOTBEDS.—Several subscribers have referred to an article in the number for May 6th, 1856, and wish to know how many loads they will want for this and that, and I confess my inability to tell them, because a load is such an unmeaning term. Look at the loads the market gardeners take from London; but where will you get such loads in the country? I recollect once obtaining consent to have ten loads of good long stable dung, and a stout fellow might have pitched the whole on fifteen barrows. Of course I was done for. When well worked your dung will scarcely be half the bulk it had in its green state. This will be a better criterion than any question about loads; I could have piled the whole ten referred to upon one cart, and no extraordinary height either.

SOWING SEEDS OF GREENHOUSE PLANTS, TENDER ANNUALS, &c.—Those who have plenty of means may do this in March; those whose room is limited had better defer till the first or second week in April, and place them in a mild hotbed. They will be quite as strong as, and require much less care than, those sown earlier. The same remark applies to propagating *Verbenas*, *Calceolarias*, &c. Begin early with scarce kinds; but if you have abundance you will have least trouble with those inserted about two months before planting-out time.

WHITE ZELINDA DAHLIA FOR BEDDING.—Late in the autumn Mr. Fleming, of Trentham, sent me a white Dahlia plant cut over at the surface of the ground. It was then full of flowers and flower-buds, standing boldly erect, and on strong foot-stalks, and in these respects much superior to the silver flower which I grew last year, or the one with a similar habit at the Crystal Palace, both drooping their flowers from the weakness

of the peduncle or flower-stem. The height seemed to be from fifteen to eighteen inches. I believe it will be called the *white Zelinda*, and that some lucky man is to have the honour of letting it out this season. I have no doubt but it will give satisfaction. I give this in reply to many inquiries about dwarf Dahlias. I am sorry to say that I know of no good dwarf yellow as a neighbour for purple and white *Zelinda*, though I have heard rumours of several. I should be glad to give a dozen or more roots of purple *Zelinda* for a root of a bold yellow Dahlia no taller. R. FISH.

POTATOES.

WHICH ARE THE BEST KINDS?

THIS being one of the seasons for planting this pre-eminently useful vegetable, and having some notes on the subject, I think they will prove useful and acceptable to most of the readers of *THE COTTAGE GARDENER*. The three qualities of most consequence in the Potato are, excellence for the table, a large yield in crop, and being free, or nearly so, from disease.

The quality for the table is being light and mealy, and good flavour; the colour is not of much consequence. Some prefer a yellow, but by far the greater number of consumers choose the whitest they can get; any other colour is not pleasant. Potatoes of a large size are not commendable, because the outside is cooked enough before the inside, whether boiled in water or steam; also, Potatoes with deep eyes are objectionable, because of the waste in paring.

The second quality is, yielding a good crop. Here, again, a qualification is necessary. It is not a good sort that yields three or four large Potatoes and a considerable number of small ones. It is much preferable to have them nearly all of a fair size. Where there are a great number of small ones there is a temptation to plant such for seed, and the consequence is, that sort soon degenerates and becomes worthless. Yellow Potatoes are nearly out of culture; therefore a good Potato may be described as being white, mealy, well-flavoured, middle-sized, and a good cropper, with as little tendency to disease as possible. As the Potato is so almost universally approved of, kinds should be grown to last all the year. The sorts, then, may be divided into early, second early, and late varieties.

EARLY VARIETIES.

1. *Oldbury Kidney*.—In my opinion, and I am borne out in that opinion by the almost universal consent of all growers, there is no early Potato yet raised that surpasses what is known about Sheffield, Retford, Nottingham, and various other towns in that neighbourhood, as the *Oldbury Kidney*. It is said to have been raised near Retford originally, but that is rather questionable. However, it is a most excellent kind either for forcing in pots or frames, on warm early borders, or in the open quarters. It matures early, and is rarely diseased; it is also of good quality in every respect. I do not believe it is much if any different from the variety called the *Ash-leaf* or *Walnut-leaf*. In good soil they will all be very similar. Perhaps the *Walnut leaf* has a somewhat smaller stem, but that I think arises from the soil. This kind, then, may be considered the best yet known. It has the peculiarity that it never, or very rarely indeed, produces any flowers; hence there are so few varieties of it.

Many years ago I tried to make it flower and bear seed (that is, as they are called, "Potato Crabs"), and I succeeded in one or two instances. The way I managed this was as follows:—I placed the few sets I intended for that purpose on the surface of a piece of ground made

rich and light purposely. I just covered the sets over, and as they came up they were earthed up slightly. When about six inches high I poured water freely on the row, so freely as to wash away the soil down to the old sets. I repeated this watering frequently, and by that means almost prevented any young Potatoes being formed. I had the pleasure to see flower-stems formed and bloomed, and I have no doubt *Crabs* would have followed; but the ground was suddenly wanted for a building, and my experiment was destroyed. Now, if any of our readers have time and means, I would advise them to try the same plan. I have no doubt whatever of their success; and then we might have an improved, or, at any rate, a renovated variety.

2. *Handsworth Early Round Potato*.—I do not know much about this variety, but it is very strongly recommended here as an excellent new variety, coming into season even earlier than the preceding. The words used about it are, "The earliest of all, very dwarf tops, and highly recommended for forcing." A person who has grown it says that it need not be planted wider apart between the rows than eighteen inches, and nine inches in the row; and it is very productive, and as good in quality as the *Ash-leaf*, and, like that variety, is not liable to the disease. It was raised, I believe, at Messrs. Fisher and Holmes', the Handsworth Nursery, near Sheffield. I was told one London seedsman said "it was worth its weight in gold." I saw a sample of it to-day (February 14th), and it appears to me to be a good likely sort. The samples were about the ordinary size, shallow-eyed, and handsome shape; there were no small ones amongst them. I hope to be able to speak more fully and confidently about this promising variety before this year is over.

SECOND EARLY VARIETIES.

1. *Haigh's Kidney*, synonyme *Lapstone Kidney*. My friend Mr. Weaver, at page 187, says this resembles the *Walnut Kidney*, but is much more productive, and nearly if not quite as early. I do not know how it may be at Winchester; but here, at Sheffield, *Haigh's Kidney* is not in its prime till August, and continues good till Christmas. I had some on my table as late as that, and better Potatoes were never eaten. The origin of this most excellent variety has been hitherto in obscurity: I am happy to be able to give the true history. It was raised at a village called Newton Kyme, near Tadcaster, by a Mr. Haigh, a schoolmaster, who took considerable pains in raising seedlings. Certainly it is one of the best sorts, possessing every quality in the highest degree. It is excellent for the table; its produce, if rightly managed, most productive; and for the table no kind can surpass it, and it is very little subject to the disease. My friend Mr. Flintham, of Rotherham, cultivates it largely, and his method, as he informed me, is to plant it in good ground three feet six inches between the rows, and one foot from set to set in the row. He drills them in, not deep, using no dibble, and earths them up, so as to have a wide ridge for the Potatoes to swell out in. I saw them growing this summer, and though the rows were so wide the tops nearly met. A root was taken up to show the crop, and I counted fifteen fine Potatoes, besides a few small ones. This variety I consider A 1. Every one that grows Potatoes ought to grow a large portion of this variety.

2. *Pink-eyed Regent*.—A good second early white, mealy variety, a great cropper, and excellent every way up to Christmas, or even through January and February. It is a handsome shape, with shallow eyes and a rough skin, and scarcely ever diseased. It is, I believe, a local variety about Rotherham and some parts of Nottinghamshire. Being a handsome-looking variety it takes at a market readily. The south growers ought

to inquire for and obtain it. It is far superior to the old *Yorkshire Regent*, itself a good variety, but subject to the Potato murrain, and wearing out fast.

LATE POTATO.

The Fluke.—I cannot learn the correct history of this best of all late Potatoes. I first saw it at Heaton Park, near Manchester, the seat of Earl Wilton, about four years ago. Mr. Shuter, the gardener, showed me the crop, and praised it very highly as a good sort. I do not think, however, that even he was aware of its excellent keeping quality. The fact is, the season when it is in the greatest perfection is May and June, or even July; it will keep sound and firm to the end of that month if prevented from sprouting too long. Indeed, if eaten before May, it tastes rather sweet, like one that has been slightly frosted; therefore use your *Pink Eyes* and *Haigh's Kidneys* till then, or any other sort you may have, but by all means keep the *Flukes* for the last of the season.

This variety, like *Haigh's Kidney*, should be planted in rows wide apart. Even in small gardens there is nothing gained by planting thickly. If the ground is completely shaded by the leaves and haulm it is scarcely ever dry, and that has a great tendency to produce disease; and, besides that, on shaded ground the Potatoes are never so good and wholesome, nor do they ripen so quickly as on ground on which the sun can shine at least part of the day. On that account I would always, if possible, let my rows of Potatoes run north and south, for then the sun can shine on both sides of the ridges; that is, on the east side in the forenoon, and on the west side in the afternoon.

To produce good sound Potatoes good ground is absolutely necessary; whoever expects them to be good in quality and quantity in wet or heavy, clayey soil will certainly be disappointed. If the soil, whether a garden or a field, has been a long time under tillage, a good dressing of lime will be useful. I see some writers recommend coal ashes. The benefit of using them is, to say the least of it, apocryphal. The only benefit I can imagine will be on strong land, as having a tendency to keep it open. I have seen very good Potatoes produced on dry moorland freshly broken up, the furze, heath, &c., burnt and spread on the surface; but that sort of land soon tires of one crop, and, therefore, a rotation is necessary.

The cause of the disease in the Potato has been much written about, discussed, and with some, in their opinion, clearly pointed out. I have my crotchets on the matter, which I may probably some day present to our readers. In the meantime I trust the above few remarks on the most desirable varieties, with a hint or two on their peculiar culture, will be useful. T. APPLEBY.

CAPSICUMS AND THEIR CULTURE.

AMONGST the plants requiring to be reared as early in the spring as possible Capsicums certainly stand first; especially when they have to fruit and mature their growth out of doors, or with but little assistance from glass. The increased demand for this article, for pickles or other purposes, has led to its more general cultivation, and, instead of a few stunted plants in pots being found in a hothouse, large quantities are grown out of doors in sheltered borders, or, what is more congenial to them, in a cold frame; but as it is not in every case that they ripen their fruit or even perfect its growth when placed in such situations, a few remarks on the conditions under which they are grown will, perhaps, solve the mystery of this, and point out a remedy.

The tropical origin of this plant would point out to us the utter impossibility of our obtaining results in our

sunless climate similar to what are gained in the hot plains of its native country. Some artificial assistance must therefore be given. Though not an annual plant, properly speaking, yet we often treat it as such, and only sow the seed in early spring under the favourable circumstances of a hotbed, potting off the seedlings when ready, and so forth. Now, this is all very well, but unless the plant be sown very early, and forwarded by all the most favourable means at the command of the cultivator, the fruit rarely ripens, or rather, very little of it does so, and a number of small green fruit-pods is all that rewards the cultivator. This is when the plant is grown in some ordinary frame or rich border, with every facility for the plants thriving and growing, and but little chance of its fruiting or ripening its fruit.

Now, the most rational plan to insure a crop of useful fruit in an open border, or when sheltered by an ordinary frame, is to sow the seeds in July or August of the preceding year, and keep them through the winter in small pots, ready for growing them on in spring. Plant them out about the middle of May in a frame made ready for them, and cover them with glass to promote their fruiting well; but, as other conditions are to be borne in mind as well, a few words on the preparation of temporary glass shelters for such plants may not be out of place here. I therefore append them.

When a frame and glass lights are used to protect Cauliflowers during the winter, or to force Potatoes or Radishes in early spring, the soil which is used is generally good and rich, for these articles can scarcely be too luxuriant, it being the vegetable and not the fruit or seed part which is the eatable portion of the plant; consequently, a rich, nutritious soil is used to meet the wants of a crowded state of things inside; but when Capsicums are planted the case is different—a partial check is put on the plant, and its fruiting well and maturing its fruit are the ends to be more desired. For that purpose a shallow soil with an uninviting bottom is certainly the best to check undue vigour in growth, and the plants, finding their growing propensity stopped, become the more fruitful in consequence, and that so early in the season as to allow the fruit time to ripen, which is not the case when a luxuriant growth or enlargement of the vegetable portion of the plant is going on at the same time. I would, therefore, advise the amateur who wishes to grow a few handfuls of this fruit to mix with his hot pickles or for other purposes, and has a spare two or three-light box for the purpose of growing them in, to select some sunny situation, and if the natural soil be a deep, retentive loam, to excavate about six or eight inches, and then spread some slaked lime over the ground tolerably thick, so that when it becomes consolidated it may be an impenetrable barrier to the roots passing through. Over the top of this I would have a light, open compost, in which a good share of stones might form a part. This compost, let it be observed, need not necessarily be poor, but by being shallow the plants speedily occupy it all, and then mature their growth and their fruit together. This is one of the principles of Nature, which is applicable in other instances as well as in this, for we see trees growing in a dry, rocky soil ripen their wood and shed their leaves before the like kinds do so on a damper soil; but few soils are impervious to the roots of trees, unless the substratum be of so pernicious a nature as to resist them. In the case alluded to the plants are compelled to adapt themselves to the place and substance allotted them, and are partly under the same control as if in pots, only the space being larger, and not bounded sideways, the evils of pot culture are avoided; but if the plants seem to require more food liquid manure can be given them, and the result will doubtless be satisfactory.

Although the above is given with a view to encourage

the growth of plants sown in the summer of the season before, yet there is no reason why annual plants might not do in the same way, provided they be sown early enough, and encouraged in their early growth; but the most important of all auxiliary forces is a bright, hot summer. This not only makes the plants more fruitful and ripens them, but also increases the hot, peppery property for which the fruit is remarkable. I might also add that in like manner a confined or contracted growth is also productive of hotter (which, I suppose, in this case means better) flavoured fruit than when grown under circumstances more favourable to the enlargement of the vegetable.

J. ROBSON.

PERUVIAN BARK.—It is not an easy matter to interest the public in an essay on drugs, but quinine is unfortunately a household word in every Indian family. The price of grain is a question which seldom gives anxiety to the poorest among us, but though absolute poverty may be almost unknown, we are accustomed to look on fever as one of the common incidents of daily life, and the very possibility of a quinine famine becomes suggestive of great public calamity. It has been known for many years that the capacity of the Peruvian forests for supplying the world with Cinchona bark was not unlimited. On the other hand, the demand for quinine has increased, not only steadily, but progressively, in England and elsewhere, as well as in India. The reputation of the febrifuge grows. It is administered in scruple doses where it was formerly administered by grains. It is used largely, as on the later Niger expedition, as a prophylactic, where it was formerly used but sparingly as a remedy for the actual fever. Every new gold mine discovered in California or Australia, every new settlement established in Oregon or in New Zealand, every new lodgment effected by civilisation on the frontiers of barbarism, acts directly on the quinine market. And yet the supply from Peru, at the best stationary, is most probably rapidly diminishing. The naturalisation in India, therefore, of the quinine-yielding Cinchona tree is a question of philanthropy as well as of agricultural economy. The Dutch have lately imported the plant into Java with apparent success. It has even been introduced into India; but the half-dozen plants which Mr. Fortune brought out in 1854 perished, partly, perhaps, from ignorance, partly because the experiment was tried on too small a scale. It has become necessary to renew the experiment, and to surround it with the conditions likely to insure its success. In South America the quiniferous Cinchona is limited to the Bolivian, Peruvian, and Columbian Andes, from latitudes 20° S. to 10° N., and to altitudes ordinarily varying from 1,500 to 10,000, but sometimes mounting to 14,000, and even under the equator, to 18,000 feet. The best bark is found in dry, rocky situations, at great heights, and in the coldest regions. In low and hot valleys the plant grows—it even grows luxuriantly—but the medicinal value of its bark vanishes. It is thought that the conditions thus indicated may be supplied by the hills of certain parts of India, such as the mountains behind Chittagong, the hilly tracts around Darjeeling, the upper spurs of the Neilgherries, and the higher elevations of the Western Ghats. In order that the experiment may be fairly tried, the Supreme Government has resolved to move the Court of Directors to send an experienced botanist to South America, empowered to select a cargo of plants for transport to India. Propagation by seed has been tried with such ill success that it is considered out of the question. All meagre attempts to transmit cuttings in small quantities have been found to be the worst economy. It remains, then, to follow the example of the Dutch, who, by sending from Batavia for a shipload of plants, have already attained results which seem to promise final success. The Court of Directors can hardly refuse to listen to the earnest representations which have been made by the Indian Government. The expense of the enterprise will doubtless be great, but at present the cost of quinine in the Indian hospitals is calculated by lacs of rupees, although it is a well-known fact that quinine is seldom administered in hospitals where arsenic can be made, however ineffectively,

to take its place. The introduction of the Cinchona tree would not only cheapen the most valuable of all known drugs, and place it within the reach of a native population which is fever-stricken through half the year, but it would add a new industry to our hill sides. Slopes unsuited to the growth of tea would grow Cinchona. New modes of culture would thus gradually encroach on lands which, in spite of their unquestioned fertility, have hitherto been untilled because they are not fit for the growth of cereals. The great problem of the colonisation of India by Europeans will never be fully carried out, for the land is but limited on which Europeans can live and thrive; but, unless our Indian mountains were upheaved for nothing, they seem to have been destined to give support to large colonies of settlers from among that class of Europeans which, while unable to return to England, is unwilling to live and die in the plains of India. The class is even now a large one, and it is increasing from day to day. It numbers already hundreds of families, and the hundreds will swell to thousands when room for patient agricultural industry is found in a congenial climate.—*Friend of India.*

TIMBER TREES.—THE SWEET CHESTNUT.

As much inquiry has of late been made of the relative strength, durability, and other properties of different kinds of timber, perhaps some one would be kind enough to investigate the cause why there is so much difference in the qualities of the timber of the Sweet or Spanish Chestnut, resembling oak in many respects. Its principal defect lies in its being what, in sawyers' phrase, is termed "heart-shaken," so that when trees of it of only a moderate size are sawn up, it not unusually falls to pieces by large portions shelling off in the direction of the layers or rings of its growth. I have even seen a large piece like a waterspout shell off. Now, this is a great defect; but what makes it remarkable is, that all the trees are not alike affected, while there is no outward sign why they should not be so, as healthy young trees are often affected by it as well as old or diseased ones. Certainly older trees are worst, and it is common in many places to cut them when they arrive at a certain size, say under a dozen cubic feet of timber or so; but now and then much larger trees are found which work remarkably well. This has led to the belief that these trees are another variety, which they possibly may be; but I have never been able to detect the difference in the growing tree, although I have had some hundreds cut up with different results, and then grown on all descriptions of soils; but in a general way the tree thrives best on a dry, stony soil, though such a one is, perhaps, the worst of any for producing good, sound timber, for quite two-thirds of the trees grown on dry, stony soils are unfit for any purpose smaller than a gate-post.

J. ROBSON.

THE WALNUT.

THE planting of this useful timber and fruit tree is, I fear, not so much practised as formerly, a circumstance that is much to be regretted. Succeeding generations will have cause to blame the present one unless the owners of landed estates awake out of their lethargy on this point, and plant this useful tree more largely.

As it requires a somewhat peculiar soil and management, I intend to treat upon it first as a timber tree, and, secondly, as a fruit tree, the management of the two being considerably different.

1. THE WALNUT TREE FOR TIMBER.—This tree is a native of Persia and the south side of the Caucasian mountains; hence it is rather tender, at least the young shoots and blossoms are often injured by late frosts, otherwise, when the wood is well ripened, our severest

winters do not injure it. The tree grows in good soil to a great size, equalling the Oak in magnitude, though more tame in its outline and the form of its head.

SOIL AND SITUATION.—The Walnut thrives well in exactly such soil as suits the Oak, that is, a good depth of loam mixed with gravel in preference to clay; but it will grow pretty well in a clay subsoil, providing it is dry or well drained. I have seen young trees growing very rapidly in peaty soil; but, as they grew old, the young shoots cankered, and the trees then made no progress. Hence, if they are intended for timber mainly, the first-named soil is indispensable. The situation should be a little sheltered, though they will bear strong winds better than most trees. It has been found that they will stand the sea breezes well; hence they will serve as a protection to other trees if planted at the outside of plantations near the seacoast. However, to obtain timber quickly, they should not be planted in high, exposed situations or in shallow, poor soils.

The timber of the Walnut is used largely for gun stocks, being light, elastic, and strong. It enters largely into cabinet work, especially for billiard and other tables. As much as £50 has been given for a single old, large tree for such work. On the Continent it is highly valued for dressing-cases and other nick-nackeries. The young trees are said to be of the finest colour, but the old to be better, and more beautifully variegated and shaded, surpassing even the finest mahogany. Surely a tree so highly valued for such delicate work, and so perfectly hardy, is worthy the attention of the planter for profitable timber.

THE WALNUT AS A FRUIT TREE.—The same directions as to soil and situation serve for the tree when planted solely for its nuts. As it is a tree suitable to protect other more tender fruit trees from high winds, it may, with great use and propriety, be planted on the wind side of extensive orchards. The wind often does great mischief to the Apple and Pear when nearly ripe by blowing off such heavy, tender fruit; but it cannot blow off the nuts of the Walnut until they are ripe enough for the dessert. Hence this fruit tree is the very one for the purpose of breaking the power of the wind from the other inhabitants of the orchard, doing away with the necessity of planting any other kind of tree for sheltering purposes. Planted on the outside of orchards they should be in a double row, each alternating with the other in this manner " . . . " at twenty-five feet apart in each row. So planted they form an impenetrable barrier from the attacks of the strongest winds.

Having fixed upon the site and mode of planting, the soil should then be well prepared. If kept under the spade entirely the whole plot should be deeply trenched the summer preceding the season of planting; then, when the autumn arrives, the planter should be on the look out for suitable trees. As this tree, if raised from seed, is a considerable time before it bears fruit, it is a good plan to get them from a nursery where they have been transplanted several times. If allowed to remain in the seed rows till they attain any size their roots will be found to be few and deep in the ground, and in such a case success in removal will be doubtful; hence I recommend such trees as have been frequently shifted. Such trees will have numerous small fibres, which, if taken care of in taking up, will be of great service, rendering the removal quite safe.

Some cultivators and nurserymen, in order to overcome this tardiness in producing fruit, have resorted to inarching young trees with the branches of such as were already in a bearing state. The late Mr. Knight, of Downton Castle, relates his experience in the "Horticultural Transactions" on this point as follows:—"I planted in the spring some Walnut trees of two years old in garden pots, raised them up to the bearing

branches of an old Walnut tree, and grafted them by approach with parts of the bearing branches of the old tree. A union took place during the summer, and in the autumn the grafts were detached from the parent stock. The plants thus obtained were planted in a nursery, and, without any peculiar care or management, produced both male and female blossoms in the third succeeding spring, and have since afforded blossoms every season." The success of that distinguished horticulturist has led others to follow the same plan with equal success, only with this difference—instead of using pots, young, tall Walnut trees were planted in a circle round a large, old bearing tree, whose branches reached low enough to be inarched to the young stocks. After the grafts have taken they are then cut off and secured to tall stakes, and allowed to remain another season in the same place; they will then have formed tolerably good heads, and may either be planted where they are to remain finally or transplanted into nursery rows for two years longer—the latter plan is the safest. This inarching should be performed in February or March, just before the sap begins to rise.

To induce early fruitfulness budding has also been resorted to. For a successful mode of this operation I must quote Mr. Knight. He says, "The buds of trees of almost every species succeed best when inserted in the shoots of the same year's growth; but the Walnut tree appears to afford an exception, possibly, in some measure, because its buds contain within themselves in the spring all the leaves which the tree bears in the following summer, whence its annual shoots wholly cease to elongate soon after its buds unfold. All its buds of each season are also, consequently, very nearly of the same age; and long before any have acquired the proper degree of maturity for being removed the annual branches have ceased to grow longer or to produce new foliage. To obviate the disadvantages arising from the preceding circumstances I adopted means of retarding the period of the vegetation of the stocks comparatively with that of the bearing tree, and by these means I became partially successful. There are at the base of the annual shoots of the Walnut, where those join the one-year-old wood, many minute buds, which are almost concealed in the bark, and which rarely or never vegetate but in the event of the destruction of the large, prominent buds which occupy the middle and opposite end of the annual wood. By inserting in each stock one of these minute buds and one of the large ones I had the pleasure to find that the minute buds took freely, while the large ones all failed. The most eligible place for the insertion of these buds is near the summit of the wood of the preceding year, and, of course, very near the base of the annual shoot; and, if buds of the small kind above mentioned be skilfully inserted in such parts of branches of rapid growth, they will be found to succeed with nearly as much certainty as those of other fruit trees, provided such buds be in a more mature state than those of the stocks in which they are inserted." I have considerably abbreviated Mr. Knight's account of this most interesting experiment, particularly a part of it which he performed upon some young Walnut trees in pots, such not being necessary for the practical part of the experiment. He does not state the exact time of the year when this budding was performed. To such persons as would like to repeat this operation on Walnut stocks I would say, plant your stocks behind a north wall or hedge for the purpose of retarding their growth. When the sap in the spring begins to flow freely, so that the bark rises easily with the budding knife, then proceed with budding. Take your buds from the south side of a fruit-bearing tree, select those minute buds such as Mr. Knight describes; and, as he says, "skilfully insert them in such parts of branches as are of rapid growth" then and there, and there is no doubt

you will succeed. I believe such trees so worked may be had at some of the great fruit-tree nurseries, Mr. Rivers' for instance, at Sawbridgeworth, Herts.

The best season for planting the Walnut tree is that for other deciduous trees, as early in the autumn as possible, that is, as soon as the leaves have fallen. When planted they should be securely fastened to very strong stakes, for the shoots of this tree are very heavy, and, consequently, more affected by the strong winds of autumn, winter, and spring. The surface of the soil should be well mulched with half-rotted stable litter two inches thick, which will keep out the frost, and keep in the natural heat of the ground. So protected the young roots will be growing nearly all the winter, gathering up a large quantity of sap against the time when the buds will break forth in April or May. Such a large store of nutritive sap will cause the trees to grow freely the following season, much more so than if no mulching had been applied. This use of mulching may be easily proved by leaving one or two trees without it.

PRUNING.—The after treatment is simple—a little attention in pruning away any ill-placed or superfluous branches, or any that may be stretching away from the rest so as to form a one-sided tree. Of course all dead branches should be cut away down to a living part. Sometimes young, strong branches will spring forth on the main stem, or in the centre of the tree. These must be neatly pruned away as they appear.

USE OF THE FRUIT.—The grand use of the nut is for the dessert. They are ripe in October, and should then be taken from the tree, the soft, outer covering rubbed off, and the nuts cleanly washed. Part of the crop may be set apart for present use, and the remainder put in jars among clean sand, and placed in a dry, cool cellar. By this means the season for using these nuts for the dessert may be prolonged several months. Walnut oil is expressed from the ripe nuts on the Continent, and is thought to be equal to almond oil.

These nuts, however, do not agree with every one. I know a lady who is very fond of them, but who is always ill after eating a small number. Hence it behoves every one to try first whether they agree with him before indulging in them to any excess, though Pliny says, "The more Walnuts one eats the more easy will he drive worms out of his stomach." Another well-known use of the Walnut is that of pickling the green fruit. For this purpose it should be gathered before the shell of the nut becomes hard. A lady of great experience in such matters has given me the following recipe for *pickling Walnuts*:—Gather them dry, prick them through with a large pin two or three times, put them into salt and water, shift them every three days for a fortnight, put them into a sieve, and let them stand a day in the air, and then put them into an earthen jar. Boil as much vinegar as will cover them well, pour it boiling hot over them, let them stand three days, then put them into a sieve, and let them stand in the air another day, then take to every quart of fresh vinegar that may be wanted half an ounce of black mustard seed, half an ounce of horse-radish cut into slices, a quarter of an ounce of long pepper, three cloves of garlic, a dozen cloves, four or five pieces of raw ginger, and a few eschallots; boil these ten minutes, and pour it boiling hot over your Walnuts, let it stand a fortnight, then put them into bottles corked close, and cover the corks with resin. They will keep for years.

Another use of the Walnut is to gather a quantity of green leaves, pour boiling water over them, and use the liquor for destroying worms on grassplots, and washing Gooseberry bushes infested with caterpillars.

VARIETIES.—In the nursery catalogues I find there are a few varieties. Their names are—

1. The Round Early Oval.
2. The Double Large French.

3. The Tender-shelled.
4. The Thick-shelled, for long keeping.
5. Highflifer of Thetford, said to be the best variety known.

To preserve these varieties distinct and true they must be increased either by inarching, budding, or by layers.

T. APPLEBY.

TRENCHING GROUND FOR FARMING PURPOSES.

"A GENTLEMAN," anxious to improve the husbandry of his neighbourhood, has inquired through THE COTTAGE GARDENER the cheapest and best way by which land can be trenched so as to increase its fertility, and, in the end, afford a fair remuneration for the labour and expense incurred. This subject is, perhaps, one which more especially concerns the farmer than the horticulturist; still, the means to be adopted are the same in both cases, and the one is often as much wanted as the other; we may, therefore, treat the subject as being applicable on a large scale, to which the gentleman's inquiry would seem to tend.

Most travellers will have noticed that in the suburbs of large towns, London for instance, vast breadths of land are under spade culture, for the growth of vegetables, small fruits, and other things required at that place. This land, often letting at from three to fifteen pounds per acre, is rendered as productive as skill and capital can make it. Dung, by scores of cart-loads, is added to each acre yearly; and, when necessary, trenching and other modes of culture are put in requisition; in fact, everything except letting it lie idle or fallow, which the heavy rents and other charges against it preclude its being allowed to do. Thus crop succeeds crop with a rapidity which can only be understood by those who have witnessed the process, and the promptness with which every little mishap is met renders a failure a rare thing except in such cases as the Potato murrain. This hard-working system is not likely to be carried into effect generally in other places, although some speculators prophesy a time when such will be the case. At present it is certainly increasing; but, as what is being done has been accomplished gradually, it is only necessary to regard the attempts to improve the culture of a district as a first step in that direction, and one deserving every encouragement and assistance.

Our correspondent says the soil he is anxious to improve by trenching is what is locally termed a "stone rash" soil, with here and there stones of a kind necessary to quarry, so that he expects to get about 150 cart-loads of stones per acre. He also wants it trenched two feet deep, and would like to know the probable expense, and what is paid for such work in different counties, as he has several acres he would like to do, with the laudable view of introducing such an improvement into general use in his neighbourhood. This is a fair case, and deserving attention.

As this involves a considerable amount of labour and the presence of rocky stones, which must be removed, it is not easy to calculate what the expense might be, especially in the absence of all knowledge of the value of such stones after they have been carted off. Local circumstances regulating these things, I can only explain the usual practice adopted in this neighbourhood (Kent), where there are many acres of a kind somewhat resembling the one in question, trenched and operated upon for Hops, fruit, and other things, and where spade culture is carried on to a greater extent than in any other district in the kingdom; so much so that I believe one-twentieth of the whole acreage within some miles of where I write (Staplehurst) is under spade culture, and probably as much more has been so at a

former time, and has since been laid down in grass, or passed into other modes of cultivation. Possibly I may be wrong in using the term "spade," as that tool is but little used, the digging being mostly or all but wholly done by a strong three-tined fork, termed here a "spud," which in make and appearance differs much from that used in other counties. The tines are long and broader, and flatter at the point than at the heel, where they are square. The socket which unites it to the handle is longer than usual, the wooden part being short; and a long crane-necked curve unites the iron part of the socket with the cross-bar of the fork or spud, which is altogether a much heavier tool than strangers would think necessary, and is better adapted for shallow digging than deep, the points projecting forward having what workmen call a good deal of "anchor-come," and a host of other local names to indicate the angle at which it stands to its work. Such is the Kentish spud, heavy, and certainly uninviting to a stranger, but in the hands of an accustomed workman an excellent tool, and one which it is improper to condemn until a better be found, as it has done its work for several generations, somewhat altered, old people tell us, in some of its parts, but much the same in general outline; and, though I have often thought a lighter tool would do as well, and have reasoned the case too with the men, still I am far from certain of being in the right; and, as many hundreds of workmen find their own tools of this kind, and have them made by their own directions, we must allow them to be the best judges; for, though custom and sometimes prejudice will maintain the use of an implement against the introduction of another, few workmen are opposed to any scheme for making their tools more handy; and I confess being not a little puzzled in the matter of heavy and light implements competing with each other by the result of a trial of ploughs in this country, where, amongst a number of kinds, the heavy Kentish-turn-wrest plough did its work lightest as tested by the dyrometer. On like principle, perhaps, a heavy digging spud may be preferable to a lighter one. Certainly the ground they have to turn over requires strength at times; and, though most of the digging in Hop and fruit gardens is shallow, the length of the tines is such as to allow of its being done deep if required.

Now, though this may seem apart from trenching, yet with such a tool our correspondent will see what is best to begin with, as trenching is done with it by the assistance of a shovel at times, and, whether the soil be hardened by dry weather or soddened by wet, a spud will be found the best thing to enter it, and after turning it up to clear itself again. In fact, spades are but little used in the extensive orchard and Hop-garden digging here, and their strength renders them equally applicable to loosen the stones and under surface in the process of trenching, of which a mention of one or two methods will convey some idea.

Presuming the field, which it is intended to partially trench, be already in tillage and under the plough, it is not unusual to commence at one side, and turn up a furrow as deep as possible. A gang of men are then set to work with spuds, as above, to dig and turn up the bottom of the furrow, a part of each spit mixing with the top soil, the other remaining in a broken-up condition at the bottom, the plough returning up another furrow. Another set of men in like manner follow it, and, being evenly distributed over the ground, as many are set to work as will keep the plough going. Generally from twelve to sixteen men will do this, and this is a ready way of doing such work; but, of course, where there are many stones it could not be done, but it is much preferable to subsoil ploughing, which leaves a hard bottom unsuitable for vegetation.

Where stones abound the above course cannot well be

followed out, as the stones must be removed, and this can only be done by hand; but in this neighbourhood the stones are generally hard, and sell freely enough for road making, and in some cases the labour of trenching is paid for by the stones, the labourer doing the work for them, or the proprietor selling them for such a sum as repays the labour; but in these cases it often happens that more stones are taken out than is necessary for the welfare of after crops. This has led some landlords to prohibit stones being gathered off at all. Nevertheless, where trenching is done, and large, unwieldy stones are found within eighteen inches of the surface, they ought to be removed. Generally speaking every stone larger than half a brick is in the way of the spade or plough, and ought to be taken out, and many even smaller; but I question very much if stones the size of road metal ever do harm, and very often do good; therefore let them remain on the ground.

Of the cost of trenching hard and stony ground it would be difficult to say; but here the price is about 1s. per rod, or £8 per acre, for a depth of twenty inches, which more often means eighteen, and which is deep enough for all purposes. Stones are paid for extra at the rate of from 6d. to 1s. per load of a cubic yard, and the more stones the better for both master and man; but generally from 60 to 120 loads per acre is a good yield for the most stony ground. When a greater depth is done, and stones are the object searched for, the above quantities are multiplied; but I am speaking of land which has been under cultivation for years, but which it is proposed to improve. In this case the stones may be said to pay for themselves, leaving the other work to be repaid by the improved crops, &c.

How far the above information may assist our worthy-intentioned correspondent it is impossible for me to say. One thing, certainly, is worth doing. The expense of an acre or two would at least be a trial, and in many cases, I should almost think in all of them, the outlay would be remunerative. Draining, of which so much has been said, is equally expensive, and it is questionable whether the improvement be more permanent than in trenching, besides which there is the laudable exercise of a public benefaction, which, if it returned only the bare money expended, is yet of some value. The greatest improvements are often losing concerns to the original inventors; but the public sympathy or gratitude often does justice to their memory, if not to themselves. If the man who can make "two blades of grass or two ears of corn grow on the place where only one grew before is of more real use to mankind than the whole race of politicians," the individual who by a judicious outlay can accomplish this on some of our light, inferior soils is assuredly entitled to be classed as a public benefactor, and it behoves all well-meaning men to assist in this good work. I hope to hear of others forwarding the results of similar trenching undertakings done in their respective neighbourhoods; for though the above is done very extensively here, it is generally the preparation for Hops or fruit, but afterwards passes into ordinary tillage, and other ground in like manner is broken up. In this way much of the half-barren-looking tract of hilly ground called Cox Heath has been brought into cultivation within the last forty years, and vigorous fruit orchards, Hop gardens, and thriving hedges occupy the place where stunted furze, Heaths, and other plants dragged out a wretched existence, with numbers of bare, stony spots, and where, some half century ago, a military camp of observation was formed to repel that invasion we were then threatened with from our now better-disposed neighbours across the channel. That ground so uninviting as this should have undergone the ordeal of trenching and improving will, I trust, be an encouraging example to others having that work half done; for there is little doubt but that, if the whole of England was cultivated as well as certain

parts of it, the annual produce would be increased one-third, and though local circumstances forbid a universal mode of dealing with land, and no district whatever has arrived at that state of perfect tillage which admits of no further advance, there is much to be learnt from an interchange of ideas and practice. I therefore invite others to report the mode and result of trenching ground on an extensive scale in their respective districts, as well for the benefit of the public at large as for the public-spirited gentleman whose inquiries the above remarks are intended to answer.

J. ROBSON.

BEES DYING LEAVING HONEY.

HAVING waited to see if any apiarian would give an opinion on Mr. M'Lellan's hypothesis on the cause of the death of bees in winter leaving honey in the hive, and not seeing any answer, I have taken the liberty to relate the following circumstance, which decided my opinion on the subject, as I previously had taken the same view of the case as Mr. M'L.

On a beautiful day, two winters ago, a neighbour of mine informed me that his bees were swarming. On going to him, there were the bees in the air just as if they were swarming. On looking about we saw a small cluster of bees on a bit of celery, when, on taking them up, we discovered the queen. We then saw the reason of the bees leaving the hive. We then put the queen on the board opposite the mouth of the hive, when we saw that she was scarcely able to crawl, and evidently in a dying state. I then mentioned to my neighbour what I had long suspected, and we agreed to watch the case.

In a fortnight from that day we examined the hive, and found there was scarcely a teacupful of bees alive in it. We let the hive remain in its place till March, when they were all dead, and on running the honey found there were 14 lbs. left in the hive. I think this fact pretty conclusive as to the cause of bees dying in winter; for, be it remembered, we saw the bees in the air by thousands.

Last summer I had two hives swarmed at once on the same Raspberry bush, and were all mixed together. I parted them, and sold one hive, and have the other now, and both have done well. If you think the way it was done would interest your readers, as I often learn something from THE COTTAGE GARDENER, I should be happy to communicate it.—CHARLES BERGER.

[We shall be obliged by the details.—Ed. C. G.]

FLOWERS IN THE LONDON SQUARES.

GREAT credit is due to Mr. Broome, of the Temple Gardens, for his persevering attempts to introduce something like gardening into the London squares. Speaking generally, their condition is anything but creditable to those residing in their neighbourhood. One suggestion I venture to make:—If it is really the case that nothing worth looking at *will grow* in London smoke, what is there to prevent the occupants of the houses that overlook the existing miserable plots from subscribing to obtain of a contracting nurseryman a sufficient supply of potted plants, which, plunged in the ground when ready to bloom, would very much alter the appearance of things for the better? Supposing the necessary funds were forthcoming, which they certainly ought to be, there might be a very respectable floral show from March to November in each year.

1. There would be the spring bulbs, *that at any rate would grow*, and which, if annually renewed and judiciously selected, would well repay their cost.

2. A collection of showy annuals, a few good kinds in liberal quantity, raised in pots, and grown thinly and strongly to succeed the bulbs.

3. A collection of the ordinary bedding plants to follow the annuals, decided colours being chosen; and,

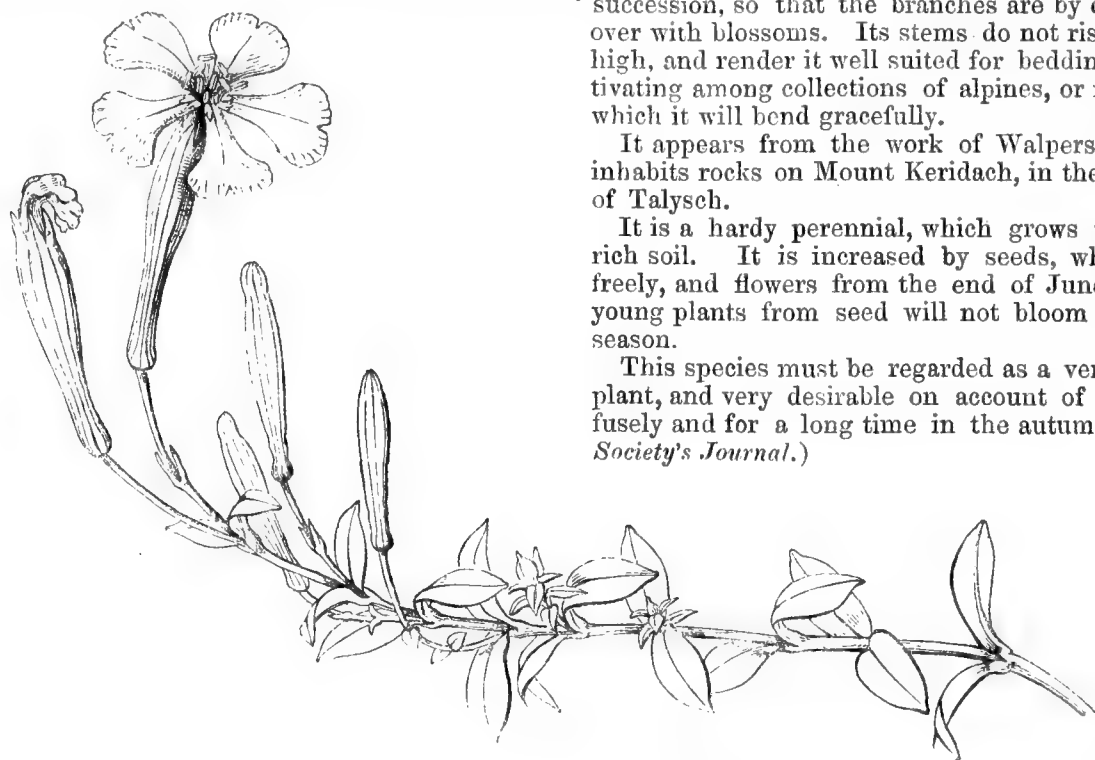
4. Chrysanthemums, forwarded in the open ground at the nursery, and raised with good balls for planting out when just ready to burst into bloom.

It would, of course, be the business of the square gardener to give water when required, remove dead leaves, &c.—A. C., *Chelmsford*.

SILENE SCHAFTA.

TRANSMITTED by Dr. Fischer, from the Botanic Garden, Dorpat; and from M. Vilmorin, Paris, in April, 1844.

This proves to be a beautiful little herbaceous plant, producing a great number of spreading slender downy stems,



which form compact tufts, and are terminated near the extremity by four or five bright purple flowers more than an inch long. Of these flowers that at the extremity of the shoot opens first, and those below it one after the other in succession, so that the branches are by degrees covered all over with blossoms. Its stems do not rise above six inches high, and render it well suited for bedding out, or for cultivating among collections of alpinas, or for rockwork, over which it will bend gracefully.

It appears from the work of Walpers that this species inhabits rocks on Mount Keridach, in the Russian province of Talysch.

It is a hardy perennial, which grows freely in any light rich soil. It is increased by seeds, which are produced freely, and flowers from the end of June to October; the young plants from seed will not bloom before the second season.

This species must be regarded as a very handsome little plant, and very desirable on account of its blooming profusely and for a long time in the autumn.—(*Horticultural Society's Journal*.)

A NOTICE OF SIMMONS'S PATENT HYGROMETER.

By the VICE-SECRETARY.

At the Meeting of the Society in Regent-street, Feb. 17, 1846, Mr. E. Simmons, of Coleman-street, in the City of London, produced an Hygrometer contrived by him for horticultural purposes. Taking advantage of the well-known Hygrometrical properties of wood, the inventor adapted a thin strip of mahogany, cut across the grain, to a pulley and spiral spring connected with a vertical arm resembling the hand of a clock. This hand was made to traverse a dial-plate marked off into degrees, expressing the amount of moisture in the air between what is observed when the instrument is plunged in water on the one hand, and exposed to excessive atmospheric dryness on the other. The accompanying figure, and the description following, taken from Mr. Simmons's Registration in the Patent Office, will further explain the nature of the instrument.

From trials made with this Hygrometer in the garden of the Society, it has been ascertained that it is much better adapted to horticultural purposes than any hygrometer yet in use. For strictly scientific purposes it is not indeed equal to Daniell's, because it is impossible to make two instruments which will work exactly alike; but it has the great advantage of being as easy to use as a thermometer, and the instruments will be quite as comparable as common thermometers themselves. In fact, differences between such contrivances, to the extent of two or three degrees, are of no practical moment.

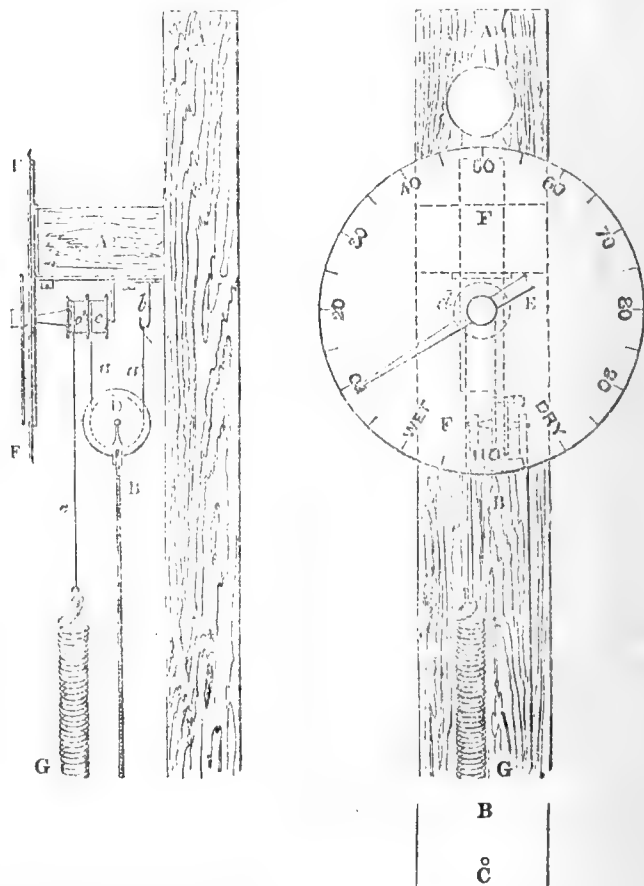
In a trial made between Simmons's and Daniell's Hygrometer in the Orchideous House in the Garden, an unexpected result was obtained. Placed in the same situation the following were the observations:—

		Simmons's.		Daniell's.
Jan. 22.	Noon	Wet	..	Saturation.
„	4 A.M.	Wet	..	Saturation.

In the course of the night the evaporating tanks lost their water in consequence of the bursting of a pipe, and the observations that followed the accident were remarkable:

		Simmons's.		Daniell's.
Jan. 23.	8 A.M.	1	..	Saturation.
„	Noon	6	..	do.
„	4 P.M.	10	..	do.
Jan. 24.	8 A.M.	50	..	do.

In this instance the air must necessarily have become drier every hour, because the usual supply of vapour was



To be hung in the shade only.
Not to be subjected to greater heat than is suitable to vegetable life.
Not to be hung in the wet or damped with the syringe.

cut off by the removal of the evaporating tanks; and yet Daniell's Hygrometer remained invariably at what is called

"Saturation;" but Simmons's was faithful to the duty expected of it, and continued to indicate increasing dryness as the vapour suspended in the air diminished. Without pretending to explain this puzzling circumstance, it must be taken as valuable testimony to the efficiency of Mr. Simmons's Hygrometer.

Two of the instruments are in use in the Society's Garden, and continue to give satisfactory indications.

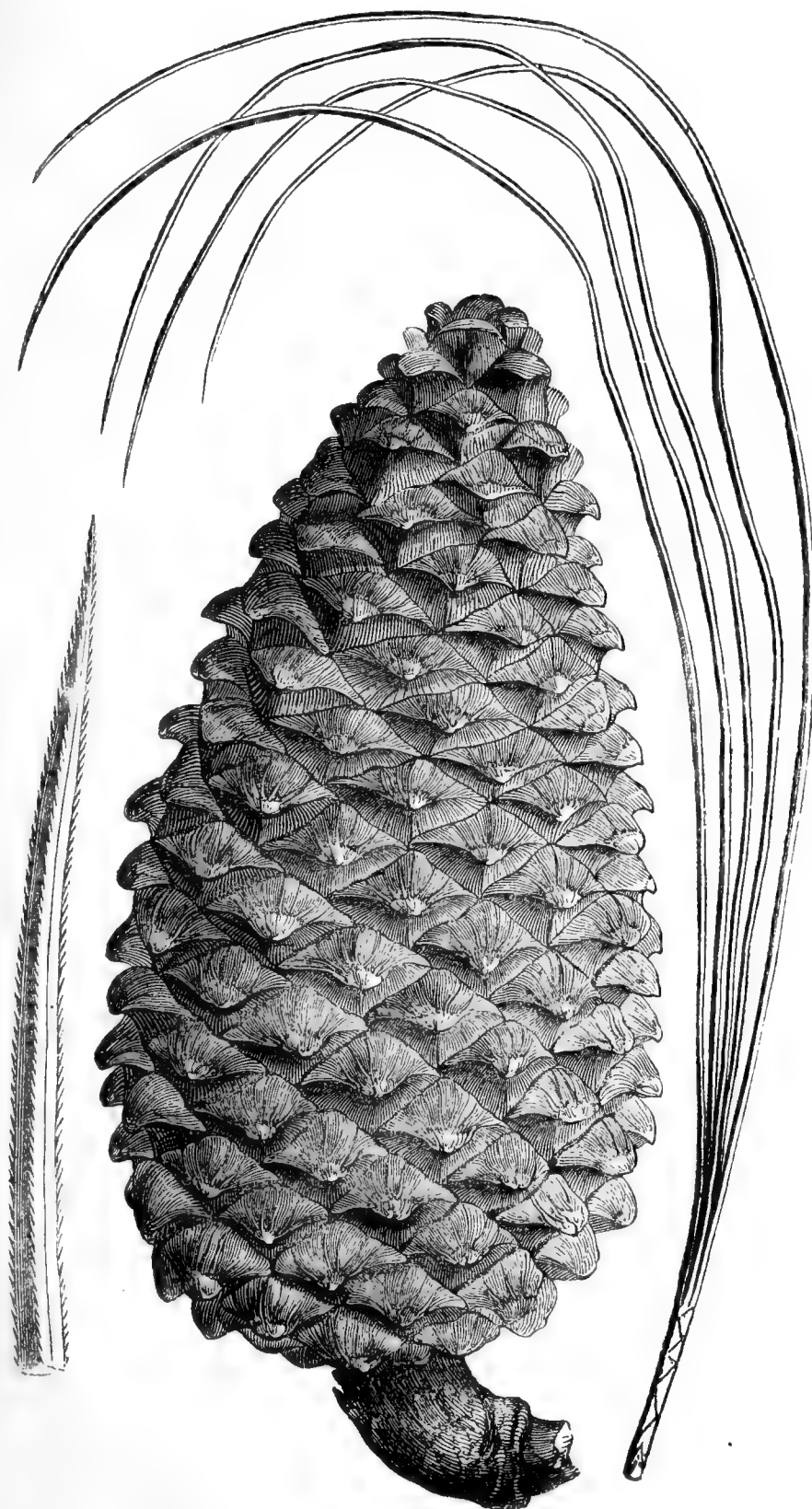
"A slip of wood is cut transversely with the grain, of about, or varying from six to seventeen inches in length, according to the absorbing property of the wood employed; one end of the slip (BBB) secured to the frame or fabric (AAAA), at pin (C); but on the other end of the slip (B) is fixed a pulley (D), which is kept in its position by a line (a a),

one end of which is secured to the frame or fabric by the hook (b), and passing through the pulley (D) affixed to the slip (B), thence round a small pulley (c) of about two-tenths of an inch in diameter, the axis of which carries a hand (E) to indicate on a dial (FF); inside, and affixed on the same small pulley, is another pulley (d) of the same size, and on the same axis, having a line (e) on it, drawn by a weight or spring (G), which pulls up the slip (B) tight; yet by its tension allows the dilation or contraction of the slip in its changes, giving motion to the hand indicating on the dial.

"The improvement claimed in this instrument consists in adapting the changes produced by moisture upon wood with a line through the medium of pulleys to give a legible indication to a hand on a dial, which renders it portable and convenient for scientific purposes and domestic usefulness."

—(*Horticultural Society's Journal.*)

PINUS ORIZABÆ.



RECEIVED along with *Pinus cembroides* from Mr. Hartweg, who collected it on the mountain of Orizaba, where it forms a tree of moderate size.

Leaves in fives, from eight to nine inches in length (on the wild specimens), very slender, sharp pointed, triquetrous, thickly set on the branches, very rough at the edges, of a light green colour, and much resembling those of *Pinus Pseudo-Strobus*. Sheaths persistent, about half an inch in length, rather smooth, and entire. Seed leaves on the young plants from seven to eight in number. Branches numerous, spreading rather irregular, slightly incurved, and slender. Bark rather rough. Buds large, light brown, much imbricated, and destitute of resinous matter.

Cones in clusters of four or five, pendulous, from four to five inches long, and two and a half inches broad at the base, straight and tapering to a point, with a footstalk nearly an inch in length, and from twelve to sixteen rows of scales in each, which are much elevated, slightly hooked, and nearly all of a size, but rather smaller towards the extremities. They measure about half an inch across, and each scale contains two very small seeds, with wings nearly an inch in length.

This Pine is very distinct from any previously known; it resembles the *Pinus Pseudo-Strobus* in habit and foliage, but differs entirely in the cones, which much resemble, but are not half the size of, those of *Pinus macrophylla*.

No evidence has yet been obtained as to the hardiness of this species.—(*Horticultural Society's Journal.*)

NOTES FOR MARCH.

As this is the best month for a general sowing of kitchen-garden crops it is recommended to make sowings of the following vegetables in small beds, in a warm, sheltered situation in the open ground:—Savoy, Brussels Sprouts, Green Kale, Chou de Milan, a few early Broccoli, early Cabbages, a small quantity of Cauliflowers, Leeks, and Stone Turnips, and frequent sowings of Radishes; Lettuces, which must be covered with litter in frosty weather; Early Horn Carrots, Mustard and Cress, and succession sowings of Broad Beans and late Peas; Knight's Dwarf Marrow and other such good sorts should be made wide apart, with other vegetables between. The early-sown Celery must be pricked out on a bed five or six inches thick of rotten dung on a hard bottom, with an

inch or two of light soil on the top, and the early-sown Cauliflower and Walcheren Broccoli on a warm border. Jerusalem Artichokes, Sea-kale, Rhubarb, and Asparagus to be planted also.

Asparagus should be planted about the end of the month; the ground that has been trenched and ridged to be levelled and dug over, and the whole trodden down with the feet. The beds to be three feet wide, with two-foot alleys running north and south; two drills in each bed one foot apart, similar in size to what are made for Peas; a compost of one-third rotten leaves or rotten dung, one-third sandy loam, and one-third sand—sea sand if it can be procured. A small ridge of the compost to be laid in the centre of each drill to form a saddle, on which the plants are to be placed about nine inches apart from each other, to be covered immediately with an inch thick of sand, as the roots are very susceptible of injury from exposure to a drying atmosphere, and finally covered with four inches of the compost.

The main crop of *Onions* ought to be sown about the middle of the month on rich ground with a dry bottom. A dressing of lime or of soot and salt to be given to destroy worms and maggots. The *Tripoli* is a sort to be used first, to be followed by the *Portugal* and *White Spanish*; but the *James's Keeping* and *Brown Globe* are the best keepers. The *Silver-skinned* and *Two-bladed*, for pickling, to be sown on poor ground and thickly, to prevent the bulbs growing large, about the end of the month. The beds to be four feet wide, with alleys eighteen inches wide. The young *Onions* to be thinned cautiously at first, until they are pretty well out of danger of the attacks of the maggot.

Ash-leaved and other early *Potatoes* appearing above ground are to be protected from frost by drawing a little soil or sawdust over them, which can be raked off when all danger of frost is over. A good breadth of *York Regents*, *Shaws*, *Flukes*, or other such good sorts to be planted.

As the *New Zealand Spinach* is a very useful and productive vegetable, by sowing a few pots in heat it would repay for the trouble of potting them off singly, to be planted out under handlights in April.

Fresh beds of *Thyme*, *Sage*, *Mint*, *Winter Savory*, and other such pot-herbs may be made.

A seed-bed of *Drumhead Cabbages* to be sown for filling up deficiencies among *Turnips*, or for planting out to produce a bulky crop for live stock, farmers, or cottagers.

A seed-bed of *Swedish Turnips* to be also sown towards the end of the month. They are frequently found most useful to be transplanted wherever a failure occurs in other crops.

Early attention should be given to the protection of wall-fruit trees. Whatever covering is available, whether woollen netting, hay or straw ropes, Fir branches, or Haythorn's hexagon netting, it should be used some time before the flowers expand, as the observation of some years induces us to believe that the fructifying apparatus, ovules, &c., are very frequently destroyed by frosts for some time before such unwelcome results are visible to the naked eye.

If a few of the improved varieties of *Roses* are intended to be added to such collections as are deficient of good flowers, the sooner they are planted the better, for if delayed longer they will not have sufficient time to get well established in the ground to produce good-sized flowers in their blooming season. If the prunings of a few good sorts could be obtained now they may be grafted upon any free, well-rooted stocks of the more common sorts of *Roses*. The conditions necessary for success are, that the scion should be nearly of the same size as the graft, to fit close together; that the supply of sap should commence as soon as possible; and that sun, wind, and rain should be excluded by the grafting clay. The prospect of success is greater in grafting than in budding; a tree is sooner formed, as in some cases they flower the first season.

A *rockery*, or mounds of earth covered with large flint stones, burrs, or vitrified bricks, and so arranged as to produce a pleasing variety, are very suitable for suburban or other such small villa gardens, where they can be more easily made to harmonise with surrounding objects. The plants suitable for such situations, and where they are seen to greater advantage, are species of *Arabis*, *Alyssum*, *Astragalus*, *Draba*, *Iberis*, *Saxifraga*, *Sedum*, *Dwarf Campanula*, *Indian* and other *Pinks*, *Saponaria ocymoides*, *Dwarf Phloxes*, &c.

Pinks, *Carnations*, *Sweet Williams*, *Wallflowers*, *Pentstemons*, *Foxgloves*, *Canterbury Bells*, &c., ought to be planted out in the shrubbery border.

New plantations of *Violets* to be made. The *Double Blue* and *Double White Russian* are good sorts.

Carnations to be potted in three parts turfy loam, two parts of rotten cowdung, and one part rough sand. Plants kept in small pots for transplanting in April, to be placed in a northern aspect, and exposed to the open air, and to be supplied with sufficient water to keep the foliage plump.

Choice *Ranunculus seed* should be sown in shallow pans or boxes, and covered as lightly as possible, and placed in a cold frame.

Tulips must be exposed as much as possible to the open air, to give luxuriance to the foliage, strength to the pillar, and soundness to the bulb; but to be protected from cutting winds, heavy rain, hail storms, and frost.

A kindly heat should be kept up in the cutting frame to increase the stock for bedding-out purposes. All cuttings that have taken root and are beginning to grow to be topped; and whoever has a few stools of the old herbaceous *Lobelias* should increase the stock by dividing and potting them singly; and roots of the *Verbena venosa* placed in heat will produce a good stock for mixing with the *Flower of the Day Geranium* in beds.

All plants in the greenhouse will require to be frequently turned round, that all sides may receive the benefit of sunlight, to produce uniform and handsome specimens. *Pelargoniums* will now require particular attention to be neatly staked in due time, not crowded together, but with sufficient space for each to develop its parts to form a beautiful plant; and such as are in an active state of vegetation to be supplied occasionally with clear, tepid soot water, and plenty of air in mild weather. *Fuchsias* should now be encouraged to make fine specimens by frequent syringings and the application of clear liquid manure. After the severe weather we have had lately, when it was necessary to keep up a high temperature to exclude the frost, plants with the soil very frequently in a powdery state must now be treated with particular attention, and where there are any indications to be seen that the ball of earth of any plant is very dry it should be placed in a feeder of water for several hours. Air during sharp, cutting March weather to be given cautiously by covering the openings with mats, to break, by sifting through them, the force of the winds. A few *Epacris* to be supplied with a gentle heat as soon as they have sufficiently recruited their strength after flowering. They are very useful plants for winter flowering, and by starting them now into growth they will ripen their wood early, and will bloom in November, when the beauty of the flowers will continue much longer than after the sun becomes more powerful in spring.—WILLIAM KEANE.

FONTAINEBLEAU AND THOMERY.

WE reached Fontainebleau March 12, about noon. The inhabitants say its name is a corruption, by contraction of *Fontaine-belle-eau*—there being fine springs of exceedingly pure water at this place and its vicinity; doubtless from being filtered through fine sand, which is said to be valuable for making flint-glass. Snow commenced falling thickly in broad flakes, so that we only saw the water in a comparatively turbid state, from the influx of the former.

Notwithstanding the unfavourable state of the weather, M. Souchet, of the Royal Gardens at the Palace of Fontainebleau, had the kindness to conduct us to the Vine-walls, which are under the management of M. Brassis, *jardinier en chef du Parc et de la Treille du Roi*, at Fontainebleau. Part of the wall has an eastern aspect, and is about twenty feet high, forming the wall of barracks. More recently built, a long extent, with a south-east aspect, is twelve feet high. The whole length is 1400 metres, or 1531 yards—nearly seven furlongs.

Part of the wall, where highest, is occupied with Vines planted two feet and a half apart; but this was said to be too close. These were trained with a single upright stem, with the bearing shoots diverging from both sides—*en palmette*, as the mode is termed—or like the leaf of a Palm.

The leafstalk and leaflets of the *Cycas revoluta* afford an example of the manner in which the bearing shoots are trained from the upright main stem; or the same may be represented by fish-bones. The bearing shoots were not strong, but firm and well matured; they were about two feet in length; and at the winter pruning they are cut close to the lowest eyes. The upright leading shoot is cut to three eyes when the plants are young, but as they get older it is cut to only two.

Where the principle of the Thomery system, *en cordon*, has been adopted, the plants are here three feet apart. Each plant, as at Thomery, has only one horizontal branch to the right and another to the left, forming the cordon; but at Fontainebleau each of these extends six feet; at Thomery only four feet. The cordons formed by the horizontal branches are about two feet apart. With regard to the comparative merits of these two modes of training there was no decided opinion. The first, with the bearing shoots diverging from an upright stem, is the more easily managed; but, in this country, it is questionable whether the eyes on the lower part of the stem would push sufficiently well; for in Vineries it is sometimes necessary to bend down the upper part of Vines trained upright, in order to insure the pushing of the lower eyes.

The soil where the Vines have an eastern aspect is naturally unfavourable, and rather wet; in fact, it was so bad that it had to be dug out to the depth of two or three feet, and replaced with better soil, mixed with some leaf mould. Manure occasionally afforded, consists of a compost, of equal portions of horse-dung and cowdung, and turf parings, in alternate layers, turned several times over before being applied. Dung alone has been tried, but the compost was found preferable—the quality of the Vines manured with it being much better than where dung only was employed. Along the portion of wall facing the south-east the soil is of a more favourable nature.

The Vines are tied to wooden trellis work. The wall is furnished with coping, projecting about a foot. Both here and at Thomery projecting copings are considered of great importance: in England they would doubtless prove equally beneficial. Under glass, projecting like a coping, it has been proved that Grapes ripen, colour, and retain their bloom, much better than they otherwise do on the open wall.

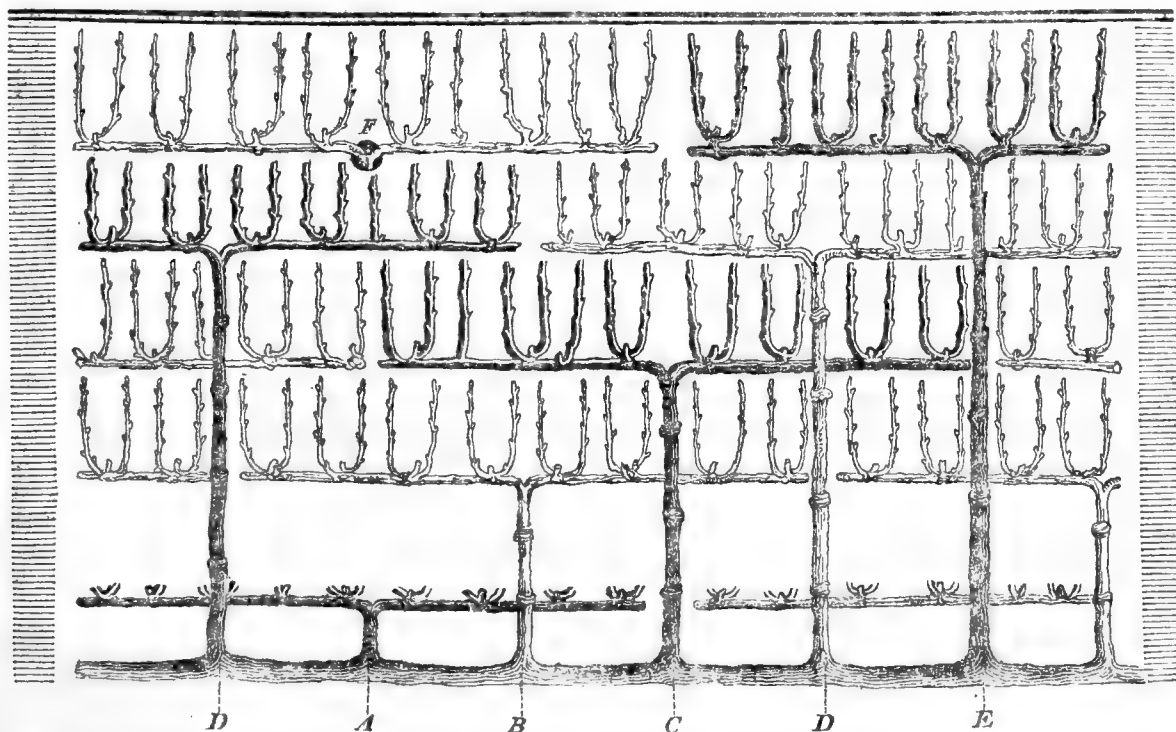
M. Souchet having ascertained that there was an intelligent *propriétaire cultivateur*, M. Larpenteur, from Thomery, in Fontainebleau, he intimated our object to him. M. Larpenteur accordingly undertook, very obligingly, to conduct us by the nearest route through the forest to Thomery.

On reaching the outskirts of the forest we found ourselves considerably elevated above the Seine, and had then a good

view of the village of Thomery, stretching along the side of the river and the base of the slope, and of 600 acres of walled enclosures for the cultivation of the Vine. Such an assemblage of walls is perhaps nowhere to be seen, if we except Montreuil. It appeared as if the walling-in system was proceeding upwards to the precincts of the forest. Plantations of Vines, in the open vineyard mode of culture, were seen verging close upon it, almost in proximity with the common Heath, which grows abundantly in the forest.

From this locality Paris is largely supplied with Grapes. We were informed by M. Larpenteur that the quantity forwarded to Paris, by barges down the Seine, from Thomery is not less than 30,000 lbs. daily during the Grape season; and the quality of the Thomery Grapes is well known to be excellent for the table. This it may be readily supposed is owing to the steep slope on which the Vines are planted. "*Bacchus amat colles*" is a quotation frequently introduced by writers on the Vine; and the south sides of hills are recommended. But what is remarkable in the case of the Thomery Vines, they are not grown on the south side of the declivity, nor does it face the east or west: the ground actually slopes to the north and north-east. I inquired the reason why the declivity, equally steep in appearance on the opposite side of the Seine, and facing the south, had not been preferred? The answer was, it was found to be too hot and dry. Probably, the circumstance of the ground sloping as it does first induced the inhabitants to commence building walls, in order to counteract the effects of their northern exposure. At all events, we were informed that the walls were first built with the view of affording the Vines an aspect directly south; but this was found too hot. They then tried the south-east, which proved the best point, as regarded the perfection of the fruit. But now, in order to suit the market, or, in other words, their own interest, the cultivators wish to have the walls still farther to the east, or even to face due east. They say there are now so many Grapes brought early in the season to Paris from the south of France that it is more profitable for the cultivators of Thomery to retard theirs till the glut of the others is over.

The different properties form long slips, separated by walls. Interiorly each is subdivided by cross walls, about thirty feet apart. Formerly the walls were composed of clay, plastered over; but they now build them of stone. They are about eight feet high, furnished with a coping of flat tiles, projecting about eight inches, and worked up to a ridge top, in order to throw off the wet. The projecting coping is considered of great importance by the cultivators, on account of its keeping the fruit dry, and preserving the bloom. Wooden trellises are affixed to the wall, and to these the Vines are trained in the following manner:—



Formerly the Vines were planted four feet from the wall, and layered till they reached it. This mode is not now strictly adopted. The plants are sixteen inches apart. The plant *A* having reached the first horizontal bar of the trellis, which is six inches above the surface of the ground, it is there cut at the winter pruning; and shoots are trained from it to form the cordon, right and left. The distance between the cordons is eighteen inches; and when the Vine *B* has extended so far above the cordon formed by *A*, it is likewise cut, for the second cordon. In this manner the Vines *C, D, E*, are treated at the winter pruning, after they have attained the respective heights. At *F* is represented the mode of introducing a Vine, to form a cordon, from the other side of the wall.

It will be seen that each Vine has two arms, extended in opposite directions; and that their utmost extent horizontally is only eight feet; whilst the bearing shoots are not allowed to pass the next cordon: consequently, each Vine is limited to eight feet by one foot and a half of trellis, or twelve square feet. We had the opportunity of seeing the Vines at Thomery winter-pruned, as in the lower cordon of the above figure; and not pruned as in the four other cordons. At the winter pruning the upright shoots which have borne the fruit are cut close to the small eyes situated at their bases; and from these eyes only two shoots are allowed to grow up to bear fruit, to be stopped in summer below the next cordon, cut back, like their predecessors, at the next winter pruning; and so on for perhaps half a century. We saw some old knotted subjects occupying no more space than that above mentioned, that had been planted by the grandfather of the present proprietor fifty years ago. Their space indeed seemed ample enough for their apparent vigour. They would certainly form the greatest contrast imaginable with the Vines described by travellers in the East, having stems one foot and a half in diameter, with branches, supported to form a canopy fifty feet in length and breadth, covering 2500 square feet. Yet, on such a portion of wall as is represented by the figure, being only eight feet in length and as much in height, it is calculated that not fewer than 320 bunches would be produced.

The soil is not rich, nor does it get much manure; only a little when the shoots become very weak, once in three or four years. It is a poor light brown sandy soil, such as would not be supposed capable of supporting anything like a crop of Grapes. We obtained some of it, which has been analysed by Professor Solly, and gave the following result:—

Analysis of Thomery Soil.

Silica	81.0
Alumina	7.0
Oxide of iron.....	3.0
Lime.....	1.5
Magnesia.....	0.5
Saline matters	0.5
Organic matters	3.5
Water	3.0
	100.0

It may prove interesting to contrast the above with an analysis of the soil in the Society's Garden at Chiswick, by the same eminent chemist, and which was published in the "Transactions of the Horticultural Society," Second Series, vol. iii. p. 36:—

Analysis of Soil in the Garden of the Horticultural Society.

Silica	78.730
Alumina	5.182
Oxide of iron.....	8.250
Lime.....	0.640
Magnesia.....	0.107
Potash and soda.....	0.047
Chlorine	0.004
Sulphuric acid	0.007
Phosphoric acid.....	0.018
Organic matters.....	7.000
Loss	0.015
	100.000

It appears from these analyses that the Thomery soil contains a greater proportion of silica, alumina, lime, and magnesia than the soil in the Society's Garden; but nearly one-third less oxide of iron, and only one-half the quantity of organic matters. The latter circumstance proves that the soil is not highly manured. The manure preferred consists of equal portions of horse-dung and cowdung mixed. The dry soil is easily moistened throughout.

Vines are also trained, *en cordon*, against low espaliers in the ground forming the central plot of the respective enclosures. In some seasons the fruit from these is said to be excellent in quality; but wind and rain often render it unsaleable, except as inferior produce. Some of the espalier Vines were sixty years old, and were even partially over-run with moss. Against a wall sixteen feet high Vines were trained *en palmette*, as at Fontainebleau.

Outside the walled enclosures, in the open ground approaching the forest, Vines were observed cultivated according to the vineyard system. The shoots are trained to stakes in summer; and at the winter pruning *all* the shoots are cut down to two eyes. The plant then resembles a stumped willow stool. The stakes here employed measured four feet three inches in length.

The variety of Grape cultivated almost exclusively at Thomery on walls, espaliers, and in the open ground, is the *Chasselas de Fontainebleau*, which is the same as the *Royal Muscadine*. The cultivators are particular in propagating only from such Vines as are the most healthy, and which produce the finest fruit. They do not say that such are varieties absolutely distinct from the *Chasselas de Fontainebleau*; but they do maintain that there is decidedly a constitutional difference amongst the plants. M. Larpenteur had the kindness to cut some shoots for the Society from Vines recently planted against a wall, and which had been propagated from Vines producing the finest fruit growing at Thomery.

We tasted some of last year's crop of Grapes, still fresh. They keep them on broad stages, occupying the middle of an upper story, leaving a passage all round between the stage and the walls. A board along the edges gives the stages the form of a shallow box, in the bottom of which is placed a layer of well-dried fern, upon which the bunches are laid. M. Larpenteur was of opinion that very dry straw would answer as well as the fern.

Having seen the mode of training the Vine at Thomery, and received, through the kindness of M. Larpenteur, full information respecting its cultivation, we retraced our steps through the forest, and reached Fontainebleau at dusk.—(*Horticultural Society's Journal*.)

VEGETABLE CULTURE AND COOKERY.

THE CARROT.

THE best soil for Carrots is that which is deep and light. It should be dug at least two spades deep, and either manured early in the autumn with good rotten dung, or have been liberally dressed the previous season for some former crop; for if the manure is applied at the time of sowing it is very apt to make the roots forked and deformed.

For very early crops the *Early Horn* and *Dutch Short Horn* are employed. They are sown on slight hotbeds, which are made up in the end of January; but, as they are not required to be very strong, they need not be above two feet and a half high. When the rank steam has passed off the bed is to be covered with about nine inches of light, rich, mellow soil, on which the seed is to be sown, and covered about a quarter of an inch deep. The beds are to be hooped over and covered with mats, or the lights of an old garden frame. The plants must have abundance of air and as much light as possible, but securely protected from frost and chilling draughts. As they grow they are to be thinned out to an inch or two apart, leaving sufficient room to enable those remaining to swell a nice size.

For an early crop Carrots may also be sown in the open air in a warm situation about the middle of February. The ground is to be well dug and pulverised, and after the seed is sown covered with haulm or straw to protect it from the frost; but in fine weather exposed during day, and covered again at night so long as the severe weather lasts, and the crop will be ready for use in May.

For a succession crop *James's* or *Long Horn* should be sown in the first week of March on a bed in an open situation, the soil of which has been deeply dug and well manured the previous season. The seed is to be sown broadcast, and as the plants come up they are to be thinned when two or

three inches high; and this crop will be ready to draw in May and the beginning of June.

For the main crops the *Surrey* or *Studley* and *Long Orange* are the best. These should be sown in the beginning and middle of April, either broadcast on beds or in drills. We prefer the drills, as being more easily kept clean and hoed. As the plants come up, and when two or three inches high, they should be thinned to three inches apart at the first thinning; but after a few weeks they may be thinned again for use to six or eight inches distance, and then the crop allowed to remain till it has perfected its growth in autumn. All that will be required during summer will be to hoe between the drills and keep the ground clear of weeds.

Before sowing Carrot seed it should be divested of the "beard" by rubbing it hard between the palms of the hands, mixed with sand or dry earth to separate it, and enable it to be distributed equally over the soil.

In October the roots are to be taken up in dry weather, the tops cut off to within an inch of the crown, and then stored in a dry place among dry sand for use during winter.

To BOIL CARROTS.—Wash them and brush them clean; never scrape them. Boil them in plenty of water with a little salt in it, and when they are done enough, which may be ascertained by trying them with a fork, rub off the skin with a clean coarse cloth. Young early Carrots will require half an hour to cook them, and should be boiled whole; but full-grown ones of large size will take an hour and a half to two hours, and must be cut down the middle.

To STEW CARROTS.—Let the Carrots be about half boiled, and, having scraped them, cut them into pretty thick slices. Put them into a stewpan, with as much vegetable broth as will barely cover them, with a very little pepper, salt, and a sprig or two of chopped parsley. Let them simmer till very tender, but not broken. When nearly done add a piece of fresh butter rolled in flour; and when they are ready send them to table hot.

CARROT SOUP.—Take six large Carrots and slice them into a stewpan, with a quarter of a pound of butter and two heads of celery cut small; then take other six large Carrots and grate off the red part only, leaving the core, which must not be used; put all together into a pan with a pint of water over a slow fire, let it simmer an hour, then add two quarts more water, and a little catsup and butter if requisite, and the crumbs of two rolls. Let the whole boil a quarter of an hour, then rub it through a sieve, and return it into the pan, and make it hot, but do not let it boil.

ANOTHER WAY, recommended by Dr. Kitchener, is, scrape and wash half a dozen large Carrots, peel off the red outside, and put them into a gallon stewpan, with one head of celery and an onion cut into thin pieces; take two quarts of beef, veal, or mutton broth, or broth made from any cold roast beef bones; when you have put the broth to the vegetables cover the stewpan close, and set it on a slow stove [or fire] for two hours and a half, when the Carrots will be soft enough (some cooks put in a teacupful of bread crumbs); boil for two or three minutes, then rub it through a sieve with a spoon, and add as much broth as will make it of the thickness of pea soup; put it in a clean stewpan, make it hot, season it with a little salt, and send it up with a little toasted bread cut into pieces half an inch square.

CARROT PLUM PUDDING.—Boil some Carrots till they are tender enough to be pulped through a colander; take a quarter of a pound of the pulp, half a pound of potato boiled and mashed very fine, a little salt, half a pound of flour, four ounces of moist sugar, four ounces of butter melted, two ounces of candied orange peel, and three quarters of a pound of currants; mix all well together over night, and boil it four hours. When the pudding is taken out of the pan let it remain in the cloth about three minutes before serving up. This will be found a very excellent pudding.

CARROT PUDDING.—Wash and scrape some Carrots, boil them till very tender in plenty of water, take off the red part, and rub half a pound of it through a colander, add to it four ounces of butter melted, half a pound of grated white bread, half a pint of cream, a little salt, six eggs well beaten, sugar to the taste, a wine-glassful of orange-flower water, and some candied orange or lemon peel cut thin; bake it half an hour in a dish with puff paste round it, and sift fine sugar over it before it is served up.

ANOTHER WAY.—To three quarters of a pound of Carrot, when boiled and pulped through a colander, mix a quarter of a pound of Savoy biscuit, four yolks and two whites of eggs well beaten, six ounces of butter beaten to cream, a little nutmeg, and two ounces of sugar, the rind of a lemon boiled till tender and pounded, and the juice of two; bake it in a puff paste.

CARROT ENTREMET.—Cut a pound and a half of Carrots into very thin strips, parboil and drain them, put them into a stewpan in boiling water, with a pound of sugar. When the water is reduced by one half, flavour with lemon; when it is reduced to three spoonfuls squeeze in the juice of two lemons, and afterwards shape it into moulds according to your taste.

CARROT FRITTERS.—Beat two or three boiled Carrots to a pulp with a spoon; add to them six eggs and a handful of flour; moisten them with either cream, milk, or white wine, and sweeten them; beat all well together, and fry in boiling lard. When of a good colour take them off, and squeeze on them the juice of a Seville orange, and strew fine sugar over them.

CARROT CAKE.—Take twelve large Carrots, the reddest which can be got, and boil them in water with a little salt; take out the hearts, and pulp the red outside part through a colander into a stewpan; dry it on the fire gradually till it separates from the pan and does not stick to the fingers. Make a cream paste,* in which put as much flour as it will take, and add the Carrot, with a little confected orange flowers minced, three quarters of a pound of sifted sugar, four eggs, one after the other, six yolks, and a quarter of a pound of melted butter; mix all well; whip the whites of the eggs, and mix them in lightly; butter a stewpan with clarified butter, drain it, and powder it with crumbs of bread; pour the whole into it, which must serve for a mould; and three quarters of an hour before it is required put it into the oven, and then turn out and serve.

CARROT MARMALADE.—Take any quantity of Carrots, wash them thoroughly, and cut off the tops and tails; scrape them well, wash them again, and dry them; cut them into pieces two inches in length, and then split the pieces into four, three, or two, according to their size; put these into a pan, with just as much water as will prevent the Carrots from burning; cover them close, and let them stew over a moderate fire till they are very tender; pulp them through a colander or hair sieve, and then prepare a syrup, using for every pound of pulp a pound of sugar and half a pint of water; clarify the syrup, and boil it up till it adheres to the spoon; put in the pulp, boil it up as other marmalades, and then put it into pots. This will keep a great length of time, and is very excellent.—ROGER ASHPOLE.

MESSRS. WEEKS AND CO.'S HORTICULTURAL ESTABLISHMENT, KING'S ROAD, CHELSEA.

I HAD been watching an opportunity all this winter to see this establishment under the severest frost of the season, in order that I might see with my own eyes the power and the effects of the power of Messrs. Weeks and Co.'s one-boiler system for heating all the different structures necessary for a large nursery business, or for any other public or private establishment, however extensive; and when I saw the weather glasses in the Experimental Garden fall below 10° on the scale at the end of January I thought that a fair specimen of an English frost, and as much frost as we could reasonably expect for the rest of the winter. But the first condition I made with the firm was, that if we should experience a much more severe frost during the month of February, or, say, for the remainder of the winter, that I should be allowed to go a second time to see the boiler and all the pipes before I gave my report, to which they readily assented "with all their hearts."

* CREAM PASTE.—Break two eggs into a stewpan, with a little salt and as much sifted flour as it will take; mix in a pint of milk, and put it on the fire, and stir it, not to let it stick, till you do not smell the flour; add a piece of butter about the size of a walnut.

Well, I spent a whole day on the premises, and I think I have been three times in every house, pit, room, or office on the establishment, with the note-book in my hand the whole time, and if I missed one turn of the screw he must be a better gardener and a more experienced man than your humble servant to convince me of it; and if I make any mis-statement I hope some one on the establishment will take the trouble to put me right. The reasons I have for being so very exact in these things are obvious enough to the trade and to most of our best gardeners; but the world at large may not know the "reasons."

Mr. John Weeks, like Mr. James Veitch, had the advantage of having been born with a silver spoon in his mouth. His father was a garden architect and engineer, and also was the first engineer in London who took up an independent plan of his own for heating hothouses with hot water. I knew the father very well, and between 1830 and 1832 I went to him several times to get a leaf out of his book on the hot-water system. Now, I do not know if it be a fact, or the hard word idiosyncrasy; but some say that one may suck in principles with his mother's milk, and others say, no, that cannot be; but they know that certain peculiarities are often transmitted from father to son without sucking—"it goes in the blood;" and it would seem that what "goes in the blood" is of the very greatest moment to a man in business.

Mr. Weeks is the first London hothouse builder and hot-water engineer who has taken up the nursery trade in addition to his father's trade, and on that account there is some of that jealousy we hear of as only peculiar to the French florists against him; and very likely if a nurseryman, after taking to his father's trade, was to take to hothouse building, and to heating all manner of buildings in addition, all the hothouse builders, &c., near him would sing out against him more or less, that kind of singing being one of the things which "go in the blood;" but, as an old observer of all manner of things about gardening and the trades alluded to, I have no hesitation in saying that it would be a most capital thing for the public at large if more hothouse builders would add a nursery to their "establishments," and if as many nurserymen would take to the trade of hothouse building in addition to the nursery business; and my reason for saying so is the vast improvement I met with here on the more usual ways of heating so many houses and pits from so many boilers. If a nurseryman could make as much improvement on the system of hothouse building as Mr. Weeks has done on heating, it would be a great gain to our "interest" in general.

The best way to show the great extent of glass which is here heated by one boiler (and hardly two houses or two pits are heated exactly to the same degree, which involves a nicety of adjustment), I say, the best way to show this is to go over the houses one by one first, and then to describe how the heating is applied in detail; but, first of all, to say that the sole management of the nursery department of the firm is under the able superintendence of Mr. Charles Gruneberg, from Frankfort-on-the-Maine, a gentleman who was "brought up" to the business by his father, a well-known nurseryman in that part of Germany, and that he afterwards studied the art in almost all the capitals of Europe; that when he was first in London, twenty years since, he passed a considerable time as the principal assistant to your humble servant in the management of one of the largest private collections of plants, and then one of the most celebrated collections round London, and that he is now established as a partner with Mr. Weeks, having, as I have just said, the entire management and superintendence of the "horticultural department" on his own shoulders. I need hardly say that for "auld lang syne" I wish him all the success which his skill and

industry are sure to command in such a firm. Indeed, I could see with one eye that his style of plant-growing and the healthy, good-looking appearance of the stock throughout were the sure test of that success of which he spoke himself in terms of high approval; and when I say he is a thorough bedding-out-plants man, a lady's man, and a man who can speak and write the principal modern languages of Europe, I think I may safely congratulate Mr. Weeks on his good fortune in having obtained Mr. Gruneberg for an active partner.

The nursery fronts the King's Road, with a large conservatory, sixty-two feet long by twenty-six feet wide, in the centre; a seed-room on the left of the conservatory as you enter, and beyond the seed-room another house, forty-five feet by sixteen feet, devoted to Heaths from two years old and upwards, and the whole in first-rate style of cultivation. On the right of the conservatory is a large show-room, to correspond with the opposite seed-room; and beyond the show-room a similar house to the Heath house, which is filled with *Pelargoniums*; also Fancy and French *Pelargoniums*. The new French style of this flower seems to carry the day everywhere; and there was no exception here to the rule of selling six of them for one of our own raising. So much for fashion! They were training these *Geraniums* when I called, and I never saw a more uniform, good style of low, bushy growth in a house of the kind at that season of the year. From this front range the rest of the houses shoot backwards from the right and left extremities. The first pair of houses on either side, with the back of the conservatory, form three sides of a square, seventy-two feet by sixty-five feet. In this square they were getting out foundations for a grand new house to cover the whole of the square, and to form a "winter garden"—a style of house first "brought out" on the Continent, and that style, let me add, which will and must be generally adopted in England before long by all the great gardening families who can afford the expense. The rest of the glass beyond this solid block, as it were, consists more or less of detached ranges, with the main flow and return pipes under the ground, and across breadths of gravel; but, as I have said before, I shall explain the whole process of heating from beginning to end after I have done with the plants.

No. 1 is the central conservatory, and the principal entrance for carriage company. It is entered under a glass dome, is the principal show-house, and the arrangement is at once pleasing and unique in this country. The edgings all round the beds and sides are perfectly original in these islands. They are made of two kinds of plants in contrast, and a flower-bed could be edged with the same plants in summer; and one of the beds in the Experimental Garden will be so edged to begin with, but the way must be explained another day. Here it is made first by planting out of pots long plants of *Irish Ivy* along the walks, and training the shoots right and left, and close to one another to the breadth of nine inches, and that breadth or width is kept as close as on any Ivyed wall; and immediately behind the Ivy stand No. 48-pots full of *Isolepis gracilis* or *pygmæa*, so close together that the grass-like plants meet all round. I never yet saw an edging in-doors which made a better impression on my eye than this. Perhaps in bright sunshine it might not tell so well, or it might tell better. At any rate, to keep up for the demand caused, no doubt, by this edging, I noticed nearly 2000 plants of *Isolepis gracilis* in this nursery, and I was told ladies would have it for "furnishing." It does in heat or cold, and will do out of doors in summer, and is the most elegant drooping Grass in the world, though not a Grass botanically.

In the beds are planted or plunged some of the finest and largest Orange trees on sale in this country, two of them, a match pair, having better heads than any of

those at the Crystal Palace, and are as healthy-looking and as full of bloom-buds as a bedding Geranium. Then follow standards and half standards of Myrtles of different kinds, and of that better kind of *Laurestinus* for standards which the French use so much, and which they call *multiflorus*. It is different from any of our varieties, and is even more stiff and compact than our smooth-leaved *Laurestinus*, from which it must be a seedling. The flowers in winter are pure white. Here they have it from the Continent "ready made" into standards from nine-inch stems to the size of standard Roses. In terrace gardens, with long, straight walks, it is one of the best of the evergreens for "accompaniments" along the lines of gravel or architecture, and is naturally in bloom all the winter, and for wedding nose-gays is the next to Orange blossoms. Then Acacias of different kinds; then Camellias. A specimen of *Stenocarpus Cunninghamii*, with a pyramidal form, is particularly elegant with its "remarkable foliage."

The centre plant in the house, and opposite the front door, is perhaps the best specimen in the country of the "Blue Gum trees" of the Australian settlers, the *Eucalyptus pulverulenta*. It is as high as the roof will allow, and is feathered majestically down to the ground. If they would remove it to the new grand winter-garden house, as no doubt they will, it would soon form the finest of the kind in cultivation; as it is, they sell from it as fast as they can well propagate. The whole race make majestic plants for a winter garden, and they are all but hardy. A large assortment of standard Chinese Azaleas, with clean stems from half a yard to a yard high, with proportionate heads, occupy the front stages, along with different kinds of Rhododendrons; *Azalea Pontica* and *Indica* in bloom; *Dielytra spectabilis* ditto; *Deutzia gracilis*, Epacrises of sorts, Daphnes ditto, with early blooming bulbs, which give a cheerfulness to the whole; and on the rafters are the best kinds of Kennedias, as *Marryattæ*; Mimosas, as *prostrata*; Brachysemas; *Tacsonia manicata*, the best of them; and on the end walls are trained *Acacia cultriformis*, *Glycine* or *Kennedya bimaculata*, *Passiflora Colvillii*; and a very curious nondescript, called here *Philopodium rigidum*, with small, dense foliage and white flowers. From the rafters hang a great variety of designs for "hanging baskets" in wood, china-ware, glass, terra cotta, and iron.

The seed department is No. 2, and is most extensive both for the gardens and fields, with the usual assortments for each, whether for "pot luck," flower-bed, or lawn, cultivated field or meadow, or the exhibitions of the florists in detail. Also, a complete collection of garden implements; and on the walls are numerous coloured drawings of Camellias and Pelargoniums, from which the best and newest of the new French race may be selected in the dead of winter. This is a most excellent plan, which many of our best growers have adopted within the last few years. On a platform below these stand various kinds of china-ware flower-pots, glass shades for Ferns, and other ornaments.

No. 3, the Heath house, is filled with a very choice selection of the most popular kinds, and all the heat they get is merely to save them from frost, with abundance of ventilation day and night when it is safe: night air seems to be one of the grand secrets for keeping Heaths in stiff, robust habit and health. The "show-room," on the right of the conservatory, is furnished with all manner of cast-iron vases, some of them of large sizes, and some with plants in them to show the effect; also, iron chairs for the garden, and various flower-stands, and lots of "rustic work" some of which are in very good designs, a rare thing in rustics of that ilk. The extreme east-end house is filled with Fancy Geraniums, remarkably well grown, and trained "for use," from which collections of dozens could easily be selected for the summer shows. The principal stove is the beginning of the right-hand

wing of houses. It is a span roof in two divisions; the extreme length is seventy feet, and the width twenty-two feet; it forms one of the abutment sides of the winter garden, so to speak, and is next to where the boiler is placed. In these stoves the following plants are the most noticeable:—The firm does not "profess" to grow Orchids, but I saw a good many about; a good selection of Stove Ferns in capital condition, and, like all the nurseries, there is a constant call for them. Of Palms, *Acrocomia horrida*; a pair of fine *Attalea*, called *sylvestris*; *Latania Borbonica*, *Corypha umbraculifera*, and *Sabal Blackburniana*; several fine *Dracenas*, *Pandanus*, *Strelitzias*, *Zamias*, *Dion*, and *Cycas*, all in a high condition. Several Begoniaceæ in bloom; the New Holland Pitcher-plant, *Cephalotus follicularis*; Venus's Fly-trap, *Dionæa muscipula*; *Sonerila margaritacea*, and *M. superba*, the better variety of it; the new *Lasiandra Hoibrenki*, named after Baron Hugel's gardener, a fine thing, with Melastoma-like leaves, and, I believe, large panicles of purplish-blue flowers, like those of *L. petiolata*; *Exacum macranthum*, a beautiful stove biennial, recently received from Ceylon, with beautiful deep purplish-blue flowers of the Gentian class; a large lot of the red Bocca del Dragon, or Dragon's-mouth Orchid, *Epidendrum macrochilum roseum*; and several other kinds from the same quarter, the neighbourhood of New Magdalena, in South America. They were suspended, and hanging seemed to agree with them very much. *Musa Cavendishii*, putting forth its fruit; a fine pair of *Maranta zebrina*, *M. rosea lineata*, and all that class of finely-marked foliage plants; several Ropals; *Pavetta Borbonica*; several pairs of *Bonaparteia juncea*, Medinillas, Crotons, Ficus, Allamandas, Cocoloba, Eugenia, Brexia, Theophrasta; *Billbergia vittata* in fine bloom; fine *Aspidistra variegata*, *Artocarpus imperialis*, Azaleas, Crinums, and Russellias; *Saccharum Madeni*, a new Sugar-cane plant, looking much like the Pampas Grass; the graceful Lemon Grass, which I was told they stand out of doors on the Continent during the summer; *Prionium Palmita*, of the Cape of Good Hope, which is of the order of Rushes, but "remarkably unlike European Rushes, having the look of an Aloe, or of the crown of a Pine Apple mounted upon a thick, black, spongy stem" (Lindley); also *Furcraea gigantea*, which never flowered in England, I believe, but once, and that at Powis Castle, where I saw the flower-stem in 1830: it is an Aloe-like plant. Fine plants of *Rogiera cordata* and *Euphorbia splendens* just coming into bloom; also several Hibiscuses and Gardenias. The rafters are covered with such climbers as *Ipomœa Horsfalliæ*, several Passion-flowers, *Stephanotis*, *Cissus discolor*; *Argyria oleracea*, a Convolvulus-like flower, and remarkably fine silvery leaves; Combretums and Cherry-pie—the new Heliotropes—and what better pie than they? The walls were clothed with the creeping Ficuses, Ferns, Philodendrons, *Æschynanthus*, and others, giving evidence of superior culture.

D. BEATON.

QUERIES AND ANSWERS.

FORCING POTATOES AND CUCUMBERS UNDER CANVASS OR OILED PAPER.

"I have set a few Potatoes in a frame of three yards long and two yards broad, and a flue under. It is covered with thin canvass oiled; the soil is about eight inches from the canvass when the Potatoes touch the canvass. What must be done to keep the tops inside? for it will not be convenient to raise the frame. Could you give me an idea what time they ought to be ready for getting up? I put them in on the 26th of January, for when they are ready to get up I expect to have some Cucumber plants ready to put into the frame. What distance should the plants be from the canvass? I have grown Cucumbers under oil paper, but never to any profit. I have a small frame, and last year I covered

it with oil paper, and I planted three healthy Cucumbers in it; but to my disappointment I only gathered thirteen Cucumbers out of that frame; but can you account for the plants having so many flowers on before any fruit appears? I want to grow a large quantity of Cucumbers this year under oil paper. Suppose I raise a quantity of plants in a hotbed under a frame until they are bushy plants: do you think they would grow in a cold bed arched over with paper? If you think they will, would you be kind enough to tell me the best way to treat them? I know a person about a mile from me that is a Cucumber grower. He planted twelve plants under oil paper, and from those twelve plants he made £3 14s., and out of the same number I do not think I should make 3s.; but I hope you will put me in the right way to prosper. What kind of Cucumbers do you consider the best for bearing? What plan do you recommend for raising a heavy crop of Onions, so that I may profit by them? What time of the year do you say Celery is very early?"—CONSTANT READER.

[If you cannot raise the frame as the Potatoes grow you should pinch out the point of the Potato shoot when within an inch of the canvass; but why not have the soil farther from the canvass?

2. Having a flue for heat and oiled canvass for covering is rather a retrograde movement. Bleached calico, painted with boiled oil, and having a little sugar of lead in it, would answer better; but, perhaps, that is what you have got.

3. We cannot tell what time the Potatoes will be ready unless we know if you can keep out frost, and keep the plants growing regularly, but not too quickly, with too much heat below; but we would risk saying from the 15th to the 30th of April; earlier if the oiled frames are carefully covered in cold weather.

4. Cucumbers to succeed these will be sown soon enough in the first or second week in March, and in a warmer place.

5. We should prefer oiled calico to oiled paper for Cucumbers; and in cold pits or beds, with no artificial heat below them, it will be quite time enough to plant them out by the end of May or the beginning of June. Seeds for that purpose may be sown by the 1st of April, and the plants hardened off may be strong in four or six-inch pots before planting time.

6. Weak plants, or those from very old seeds, produce male flowers in most abundance. Pinch them off as they appear, and if the treatment is otherwise right the plants will gain strength.

7. Plants so grown must be treated just as if they were under glass, and we presume you know all about that. In August and September they would often be better by moving the paper or calico off in fine mornings and afternoons, replacing them at night, and for six hours in the hottest parts of the day.

8. Unless your neighbourhood is peculiar we can hold out no great pecuniary reward. Why do you not take a leaf out of your neighbour's book?

9. Any short, hardy kind, such as *Cuthill's Black-spined*, the *Stockwood Ridge*, or the *Southgate*, will suit you best.

10. For Onions, trench and manure the ground well, turn it over and over several times in winter, dig it fine in March, and the first fine day after the soil is comfortable and dry tread the ground, rake it fine, and then sow in rows a foot apart, and thin to four or five inches in the row.

11. We hardly know what you mean by Celery being early. Some people are never without it. We consider good blanched Celery in August as being early, though we have had fair small heads in July. Ask fewer questions at a time.]

SUBSTITUTE FOR BENDS IN HOT-WATER PIPING.

"I intend to erect a Vinery, and also an orchard house, both heated by four-inch pipes. There is a considerable extra charge made by the founder for "bends" for these pipes; and it has occurred to me that these might be saved by introducing the ends of the pipes at the corners of the house into small wooden boxes, through which the water would flow. Do you think these might be so constructed as to keep tight?"—A.

[There is no difficulty in making the boxes as you propose, but the sides should be beat as if you were going to make a brewer's cooler. You would almost require the pipes in both houses to be on the same level if heated by the same boiler. Such boxes are very useful, when the pipes run in the same line, when you wish to heat several divisions, as a sluice or plug shuts off at pleasure. As your pipes seem to come and go from the box at right angles with each other, we fear the circulation will not be so good as if you had circular bends; but we may be mistaken, as we know not the distance from boiler, &c. On the whole, though you may save a little at first, yet, as you will have some trouble in making the boxes properly, and fitting the pipes to them, were we going to the expense of pipes for the rest, we should have it complete all through.]

GARDEN TO A LOW-SUNK HOUSE.

"I am restoring an old Elizabethan house, date about 1600, showing the timbers, gables, &c., and improving the interior by lowering the floors of the rooms to add to the height, which places me in an awkward position as regards laying out the garden, the level of the drawing-room glass door leading into the garden being nearly four feet below the level of the garden; and as I am aware it will require both taste and ingenuity to obtain a pretty look out, I should feel deeply obliged by your advice and assistance.

"I am very fond of terraces of grass, if you think one or more would be in keeping with the style and date of the house, which I am anxious to carry out as far as possible."—A SUBSCRIBER.

[You will never be able to make it satisfactory. All the soil to six inches below the door or window-sill ought to be moved to the sides and farthest-off end of the garden, and to be disposed of in successive terraces, with steps right and left next the house, and in the centre of the farthest end, which should be the *lowest*; then the middle to have a walk all round, and the centre laid out as your own taste dictates.]

PROPAGATING CINERARIAS, &c.—RESTORING CACTUSES TO HEALTH.

"A SUBSCRIBER' would be glad to know whether *Cinerarias*, *Primulas*, *Thunbergias*, and *Lobelias* are best raised from new seed every year, or whether it is best to preserve the old plants?

"Also, whether *Cactuses* will recover, which have turned quite yellow from having been watered when they ought to have been kept dry; and what is the best thing to do now?"

[It is best to raise all of them every year from seeds; but extra good seedlings of the *Cinerarias* and of the *Lobelias* should not be cast off yearly, but be kept and propagated—the *Lobelias* by cuttings, and the *Cinerarias* from suckers from the old plants, after being planted out of doors a couple of months after flowering. *Thunbergias* being annuals with us, and not doing well by cuttings, must be got from seeds every year, and they should be sowed before February is out. Some gardeners sow them on New Year's day, and those who do, and have the convenience to nurse them well till the end of May, may then plant them out of doors, and get them to ripen seeds, treated like Sweet Peas; but they make fine pot plants, and dislike much sun when in pots, or anyways in doors. The finest *Thunbergia* we ever saw was one which was planted out of a pot in September into the newly-made border of a new small stove house. It was some weakly plant which did not bloom that summer, but it "took" to the new border most surprisingly, growing on and on all that winter, with leaves half as large again as we ever saw on any of them, and by the middle of May, when it came into bloom, it could not be much short of thirty feet long, and a "faggot" of side-shoots had to be cut off to keep it to the pillar and from darkening the front of the roof; but the flowers were such Black-eyed Susans of their kind as never were seen before or since, and every pod ripened seeds.

The *Cactuses* will do yet. Turn them out of the pots, shake all the soil from them, and trim off every dead morsel of

root, and pot in sandy loam in very small pots, and give very little water for a long time. There is no fear of them.]

DRIVING ANTS FROM A LAWN.

"Information is requested respecting the management of a Lawn, which, for the last few summers, has been infested by ants. If not stopped in their progress they will soon have entire possession, as large patches are now completely riddled through by them. Any useful suggestion on the subject will be most thankfully received by C. T."

[Ants are not difficult to get rid of on lawns if they do not lodge in or under old walls or trees, especially if you begin early in the spring, before they begin to breed for the season. Soot water will most certainly drive them away from any open piece of grass, but not kill them, as we ourselves have proved over and over again. They cannot bear the smell of soot; but in water it cannot be used so strong as to get them off all at once; it must be applied once a week or ten days through April, or earlier in some years when March is mild and dry. Soot water is, moreover, a good dressing for any lawn; worms do not half like it. A handful of fresh soot in a gallon of water, and well stirred, is the receipt, and we may add that it ought to be applied with a rose watering-pot in dry weather. Once we used it all through April and the best part of May before we were entirely clear of the ants. Three years since a neighbour, who was tormented by them for years, discovered that they took up their quarters in a hollow Oak tree at one end of the garden. At the end of February, 1854, his gardener stopped up all the holes round the tree but one, and put brimstone matches to that one, and they were all dead in a few hours, and none have come since.]

BERBERIS ASIATICA.

"Will you allow me to ask whether you or any of your readers can inform me where, and at what price, I can procure plants of the *Berberis Asiatica*, as I am anxious to make a hedge upon the plan recommended in a late number of THE COTTAGE GARDENER? In this neighbourhood I cannot meet with a single plant."—H. S. H.

[We have done all that we could to introduce *Berberis Asiatica* as a hedge plant, and for light soils it is far superior to "quick" for farm hedges; but then there is no one to teach young farmers, or to unteach old ones, the absurdity and all the absolute nonsense about the *Berberis* mildewing corn. A gentleman, who had taken second degrees at Cambridge not long since, has ordered all the *Berberis* in his garden to be rooted out, because his *Verbenas* had the mildew two years running! There are above 2000 *Berberis* of kinds, including 100 *Asiatica*, in the Experimental Garden, and no mildew will come near any of the plants in the garden! We shall soon be supplied with *Berberis Asiatica*, at least, from New Zealand seeds. It is the best hedge plant out there, and some settlers from Devonshire have bespoke all the English seeds of last season's crop, and in a few more years we shall have it back by sacks and bushels, and have it reared like Larch and Scotch Firs, and sold cheaper than either. We saw it quoted this winter at twelve shillings a hundred; but we forget where, or if the size of the plants was given. A London first-class nurseryman could find it for any one. Those who have any to sell should advertise. There is a demand for it.]

RENOVATING A LAWN.—DWARF EVERGREENS.

"I have a lawn in a town garden which is patchy in places too small to mend with turf.

"1. What is the best way and time to sow seed, particularly as to covering the seed securely; and where can good seed be got?

"2. Can anything be done to thicken the growth of the grass and remove worm casts? A rich dressing does not answer, of course.

"3. Can you give me the names of a few dwarf, compact, hardy-flowering, or otherwise ornamental evergreens, Conifers, or Heaths, for the front row of a shrubbery? One or two new things, if to be depended on."—H. S.

[1. Towards the end of February is a very good time to renovate a lawn, and the best way to do it is this:—First have it swept most thoroughly when it is quite dry; next morning have it rolled most completely; and on the third morning, after rolling, mow it to a "close shave" all over; then sweep off the grass if you do not use a mowing machine, and then the lawn is ready for a good seeding; and the best seed-growers or sellers advertise in our columns, and you must pick out for yourself. Tell the seedsman; if your lawn is of sandy soil, or of clay, or between; if it is high, or low, or middling; shaded, sheltered, or much exposed; and, above all things, tell him in what part of the kingdoms of the earth it is situated, and also the extent to be sown over, and he will then know to an ounce how to mix the seeds for you, and the right quantity of the mixture. Sow that quantity *the day you mow*, and cover in the seeds with prepared soil or compost if you can; and if not, cover it with common soil from the borders or quarters in the garden, rake off the stones and clods very carefully, and roll again two or three times in dry weather.

2. To get rid of all the worms in one or two days you would need to try a most dangerous experiment, that is, to take corrosive sublimate, a deadly poison; and if in powder, put a tablespoonful of it in fifteen gallons of water; with that water the lawn as you would a bed of Carrots; and every worm in it, if it only smells the poison, will come out on the grass before your face, and those that are poisoned you must sweep off, and bury.

3. In most places the following evergreens are suitable for the front of shrubberies:—*Erica herbacea*, two kinds, one of the dwarfest and earliest-flowering of shrubs, and may hang out on the grass; *Daphne cneorum*, ditto, and the sweetest of all flowers in June. It must have very sandy soil; but it does pretty well in peat. *Erica vagrans*, two sorts, is the next best kind to do with little or no peat, and in almost all situations; and *Erica stricta* will do on a dry bottom without peat if the soil is light. The rest of the hardy Heaths must have peat in nine places out of ten. *Conifers* are altogether unsuited for the front of shrubberies. *Andromeda arborea* is a fine front plant, but will not do without peat. *Laurestinus multiflorus*, as it is called, is the best kind for the very front row, as it keeps so dwarf and stiff; it is the kind which the French make little pot standards of. Then *Aucuba*, and two kinds of *Pernettya*, *ciliaris* and *macro-nata*.]

KITCHEN-GARDEN SEEDS FOR GIVEN SPACES.

"M. H.," a lady whose case is, doubtless, like that of many others, has inquired if the following quantities of seed be sufficient for the spaces allotted:—

1 pint of Early Peas for a row of	20 yards in length.
1 pint of Early Broad Beans, ditto	36 "
1 pint of Kidney Beans, ditto	26 "
1 pint of Marrowfat Peas, ditto	32 "
1 oz. of Carrot or Parsnip for ..	15 square yards.
$\frac{1}{2}$ oz. of Turnip for	11 "
2 oz. or 3 oz. Radish for spring for	4 "
$1\frac{1}{2}$ oz. ditto for autumn for	4 "
$\frac{1}{2}$ oz. of Cabbage or Broccoli, &c.	4 "
1 oz. Onion seed for	15 "

[Simple as the above may seem, it is no easy matter to give an opinion that will suit all cases, for some grounds require double the quantity of seed that others do; and in autumn, winter, or very early spring it is always best to sow double the quantity of seed that would suffice under more favourable circumstances. For instance, a pint of early Peas may sow 20 yards in March or April, but in November a quart is not too much; 1 pint of Broad Beans will certainly not go further than 18 yards unless very thin; the Kidney Beans will go farther; and Marrowfat Peas, being sown at a better season than the early ones usually are, will go farther, 18 yards is far enough for a pint, and many would sow thicker: it is better to give more room between the rows than pinch the seed. Carrot seed ought generally to be sown thicker than Parsnip, but the quantities stated will do. More Onion seed may, however, be sown, as they are often wanted in a young state. The Turnip will do; but it is better to reverse the Radish, and sow most seed in the

autumn. The Cabbage seed is ample, provided the season and the ground be both favourable.

In reference to the above it is generally better to sow too much than too little. Garden crops are more under the eye of the cultivator than field ones, and a little extra seed is not a serious affair; but *thinning in time* cannot be too strongly impressed on all.]

TO CORRESPONDENTS.

MURIATE OF POTASH (*Rusticus Expectatus*).—We have never heard of this salt being applied as a manure to Potatoes. It certainly could not supersede the application of organic manures. If we used it we should apply it mixed with soot. An answer to your query about *Bees* will be published next week.

MANUALS (*A Cambridge Subscriber*).—Your agent's agent in London must have neglected his duty. All the Manuals are on sale at our office. Any bookseller can get them for you, or if you send the requisite number of stamps to our office with your direction you will receive the numbers you require by return of post.

BROMPTON STOCKS (*A Lover of Bromptons*).—You may apply liquid manure to these as soon as they begin to grow; but we should prefer opening the ground round the roots of the weak ones, and putting a little well-rotted manure to them.

COWSLIP VINEGAR (*C. B. C.*).—We have referred your question to Mr. Ashpole, and he says he never heard of Cowslip Vinegar; but *Elder-flower Vinegar*, he says, is made by filling a quart bottle with the flowers of Elder, pouring cold vinegar over them, and letting them infuse for a fortnight; then strain it through a flannel bag, and put it into bottles. He presumes it is only to substitute Cowslip flowers for Elder, and proceed in the same way to make Cowslip Vinegar. Perhaps some of our readers at Ledbury will favour us with some information on this subject.

FLOWER-BEDS (*D. H.*).—Plant the beds with bedding plants in summer, and with evergreen and variegated shrubs for the winter. The centre one to be filled with Rhododendrons; 1, 2, and 3 to be planted with Roses, standards in the centres, and dwarfs round them; the outside and spare places to be planted with summer flowers, as Pæonies, Rockets, Lupines, *Oenotheras*, &c.; and No. 4 to be planted with Scarlet Geraniums in the centre, with yellow Calceolarias round them, and a circle of white Verbenas or Variegated Alyssum round the outside.

DISEASED CAMELLIAS, AZALEAS, &c. (*J. W. W.*).—The leaf of the Myrtle had dropped out, but if at all similar, there can be no doubt of the reason of the poor appearance the leaves present. The Camellia leaf is rusted, the consequence, we suspect, of a cold temperature, followed by a dry and hot one, and too much wet at one time, and too much dryness at another. Besides this, the Camellia leaf, the Azalea leaf, and, we presume, the Myrtle leaf, have been infested with thrips, whether you have seen them or not. We would prune the Camellia and the Myrtle well in, and wash them thoroughly with soap and water, in which a little tobacco was dissolved, and then place them in a growing heat of about 60° to 65°. The Azalea we would treat in a similar manner without cutting down, going over the plant several times. You may thus succeed in getting a clean and healthy fresh growth. The old leaves are past recovery; but allow the leaves of the Azalea to drop as the others grow.

SUCCESSION OF PEAS (*W. M. W., Torphichen*).—If you were to sow the whole five sorts you mention on the same day they would ripen in succession; but you would have a better succession if you were to sow the *Bishop's*, *Burbidge's*, and *Hairs*' varieties a week after the first two you name, *Daniel O'Rourke* and *Burbidge's Eclipse*.

SNOWDROPS (*A Constant Subscriber*).—Your only mode of getting rid of them is by stating in an advertisement what you have to offer for sale, and the price.

COCOA-NUT FIBRE (*J. K.*).—Apply according to this direction—"Patent Cocoa Fibre Company, Kingston-on-Thames, London, S.W."

ALLEDALE GREENGAGE.—A. wishes to know more about this Plum, mentioned in our No. 319 (Vol. XIII., p. 3), and whether plants or grafts of it can be obtained.

BERBERIS ASIATICA (*C. P. C.*).—You will see what is replied to another inquirer.

BIRDS' EGGS.—A *Northamptonshire Vicar* states in reply to "F. A. S.," that "the Society for Promoting Christian Knowledge publishes a very beautiful book on the subject, with charming coloured illustrations." It is not a child's book.

NAMES OF FERNS (*J. Jones*).—1. *Adiantum macrophyllum*. 2. *Asplenium cicutarium* or *Cænopteris cicutarium*. 3. *Adiantum pubescens*. 4. *Darea* or *Asplenium flaccidum*.

THE POULTRY CHRONICLE.

MR. HEWITT AND HIS CALUMNIATORS.

We purposed publishing this week extracts from a correspondence relative to some of the most disgraceful attempts to injure a man of character that have ever been devised; but, owing to the absence of one letter, we think it right to postpone the publication until our next number appears.

GAME FOWLS.

THERE are two classes of individuals now-a-days requiring good birds of this breed—one seeking the bird in its purity, the other an animal adapted merely for exhibition purposes. As the popular voice has enunciated its decided opinion that

a good big one is far superior to a good little one, I must beg most emphatically to exclaim, *vox et preterea nihil*; for the good big one we are accustomed to see paraded before simple folk as the old English Game bird is a very coarse imitation, (*vide COTTAGE GARDENER*, January 29th, 1856,) and not usually a bird of visible or practical merit. He is not a bird of form, he is not a bird of feather, and he is not a bird essentially *per se*. He can bully, he can swagger, he can crow, but he cannot make any way even in a stand up for love. His great, gawky, overbearing carcass can ruffle out a frill as long as your shoe, and by the time he has jumped up and down some thrice in a minute, a real, thorough English bird has, by a rapid succession of blows, at last caught the ribs—for no higher can he go—of the monster, who, as if touched by an electric shock, then stands transfixed until suddenly attacked again, when off he darts with outstretched neck and lowered wings, skitting across the yard, the laughing-stock of every looker-on. We don't want cock-fighting, we don't want brutality, nor do we want a lot of men seated round a pit looking at birds killing each other; but we do want the birds carrying off prizes to be of the true make, quality, and composition of Game birds, and, if tested, able and often too willing to prove it. Game birds are to be essentially Spartans—"death or victory."

If it be advanced that many a good bird is a big one, well and good. He may be so, but he is never foul; and whilst we are on Game subjects let us allude to the old English bull-dog. Head, and skin, and tail are the chief points. Things are reversed now. Size stands first, then colour, and lastly, head and tail; and skin or delicate close feathering—*nowhere*. It is all stuff—perfect nonsense and *bosh*. Men of no experience in these matters are called in to look first at a Dorking, and then at a Duckwing, or a Malay and a Derby Red—birds as opposite as light from darkness from each other. Experience in caged or penned birds has taught judges to see the difference in each breed as a relative class; but the individual excellencies are all lumped under the term *size*.

The country is the place alone to view the Game bird. His actions of perfection do not consist in craning up his neck, sidling away, and pecking at the wood of his pen. Better, if you are no judge of his quality, to see him escorting his wives across the green sward, and no mean idea of his quality might be inferred from that of his aristocratic blood. Black Reds, Brown Reds, and Duckwings, when pure, have a peculiar bearing which indicates breeding, as, indeed, has everything else when purely and nicely bred.

A word about Duckwings. I set it down as a fact that in no two remotely separate districts have these birds been judged by one standard of identity, although it is much easier to discover a cross in them than in any other variety. Observe the saddles—often red, often half red, and seldom the proper colour. All the world knows a Malay from his hypocritical and warty eye, and therefore the mixture, independently of other traits, can be easily detected; but it is not so easy to discover a trace of a Red in a Duckwing except you are accustomed to *breed* them. Half of the present race are decided mixtures. Where get ye the red saddles, the 7-lb. birds, the long weak tails, the tall shank, big bone, heavy head, and flowing hackle? Take your license; "mingle as you may;" get you size; now a little black red for the breast; then a little brown red for a dark leg; and if cleverly managed, and a white leg and size be wanted, a little in-and-in mixing with a gamey-looking Dorking "isn't so dusty." What's the odds? We know there are no 7-lb. Duckwings, and so we must *make 'em, in course*. The hens, too, no odds; let them match: if they *have* round, thick polls, spotted bodies, tall combs, small eyes—provided they are big, never mind. My boy would say, "Chance it, sir; he ain't no worse than Mr. —'s, who wonned a fust wi' the bird our little half-bantey used to whollop so. I shure 'ee they don't know no better; how shud 'em, when I s'pose they never zeed a spar in their lives, poor fules?"

Let any person about to embark in Game fancying purchase a pen of any class (Game) and breed from them. How miserably is he disappointed to find no two chicks alike; probably the pullets with one coloured leg and the cocks with another. In the Black Reds there will be duns, reds, gingers, furnaces, ginger reds and blues, browns and nondescripts. In the Duckwings, most likely, reds, greys,

piles, and a sprinkling of all the manufacture put together. What's to be done? I'm sure I can't tell. Boy Jem says, "Send me to tell 'em better;" and 'pon my life it's not a bad remedy.

I must say white, clear blue, or yellow legs are the primitive colours.—W. H., *Exeter*.

CAUTION TO PIGEON AND POULTRY AMATEURS.

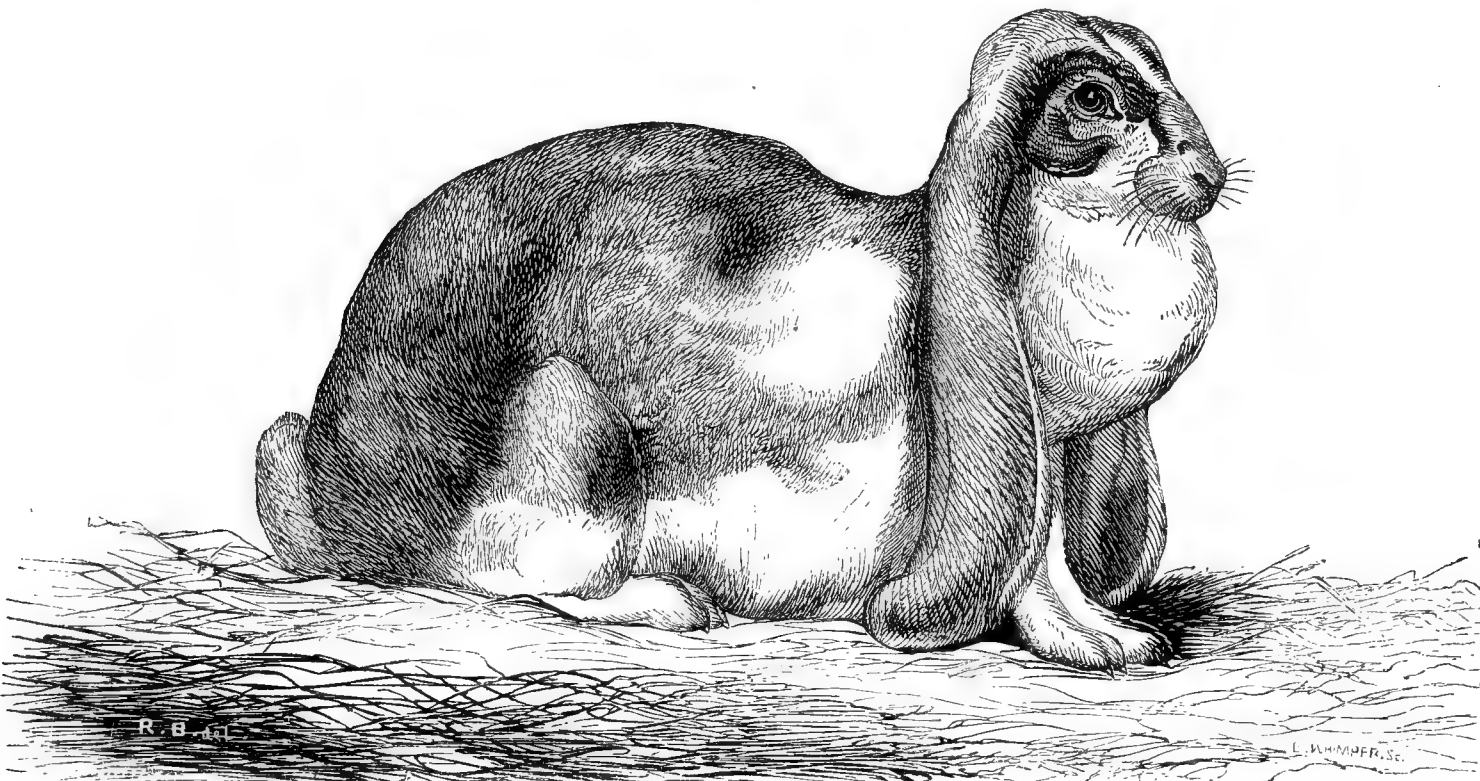
WHATEVER may be thought of the Manchester school of politicians, there can be but one opinion amongst honest men respecting the character of a certain school of Pigeon fanciers who at present reside in that city.

Their method of obtaining Pigeons without purchase is by writing to those who have taken the prizes at recent

exhibitions, inquiring if they have birds for sale, and the price. On receiving a reply they direct the birds to be sent by an early train, and this is the last occasion on which they favour the victim with their autograph; for, should he be sufficiently verdant to send the birds, no amount of letters elicits a reply, much less the promised post-office order. On the contrary, should he have sufficient sense to require the money first, or a respectable reference in town, they at once perceive they have got hold of the wrong man, and waste no more postages upon him.

As many persons have been swindled out of their birds in the manner described, I should strongly recommend all amateurs to decline altogether sending their birds to strangers without pre-payment. Several instances of the successful working of this scheme have recently come under my notice, the last attempt being an unsuccessful one to obtain a pair of Carriers from Mr. James Percival.—W. B. TEGETMEIER.

THE LOPE-EARED RABBIT.



FLAT, OR FULL-LOP RABBIT; WITH BUTTERFLY SMUT.

The property of Mr. Percy Boulton.

IN breeding the Lop-eared Rabbit there are seven points to aim at, namely, 1st, length of ear, measuring from the tip of one ear to the tip of the other; 2nd, width of ear; 3rd, colour, namely, blue and white, black and white, tortoiseshell, fawn and white, grey and white, fawn, blue, black, grey, sooty, or dusky fawn and white, with pink eyes; 4th, position of the ears; 5th, the size of the eye, and the larger this is the better; 6th, the general carriage of body; and 7th, the size. All these properties are very fairly exhibited in the print. The longest-eared Rabbit ever bred measured 22 inches in length of ear, and 5½ inches in breadth. The fashionable colours are blue and white, black and white, and tortoiseshell. The required carriage of the ears is well shown in the print, and the requisite points are these:—Both ears should fall equally, and as near to the edge of the inner corner of the eye as possible. The round or convex surface of the ear should be outwards, and the concave internal surface nearly concealed, and lying close to the face. The ear itself should be of a whole colour, the same as the rest of the prevailing colour, whatever that may be. It should be firm, though narrow, and rounded at its root, rapidly becoming broad till about two-thirds of its length, when it reaches the extreme width, from which point it should gradually taper to a somewhat angular extremity. The ear in texture should be soft, silky, and semi-transparent, showing the veins, and the hair with which it is covered should be short and fine.

The general carriage of a Rabbit should be as follows:—Low at the shoulders, high at the rump, head resting on the dewlap when sitting, which is a double-fold skin filled with fat, and covered with soft, white fur, seen under the chin of the doe, and it begins to appear at the age of about nine months. The greatest weight I have ever heard of for a Rabbit is 20 lbs.; but the average is 9 lbs. The proper marking for a Rabbit is as follows:—The nose should be marked at each side with some dark colour, having a dark-coloured mark running up the face so as to meet the marks before mentioned, with them forming what is called the butterfly smut, which is so called from its resemblance to a butterfly with its wings extended: this appearance is shown in the drawing. The eyes are surrounded with colouring, which joins with the colour on the ears. The chain is a line of spots at each side of the shoulder, running from the ears to the saddle, which is a large patch of colour, so called from its resemblance to an ordinary saddle. All these markings are shown in the drawing. To be good specimens of this breed none should measure less than 18 inches; but 20 and 21 inches, when met with, are remarkable lengths. These, like other animals, require a cross of fresh blood frequently, which may be accomplished in the cheapest manner by buying a good buck from time to time from some well-known stock.—PERCY BOULTON.

CHARACTERISTICS OF GAME FOWLS.

I AM glad to find that some one has at last taken up the subject of the Game fowl in *THE POULTRY CHRONICLE*, and having been a breeder of that variety of poultry for about fifteen years, I venture to offer a few observations in reply to the "*NORTH COUNTRY AMATEUR*." Having bred Black-breasted Reds, Brown Reds, and Duckwings (both Grey and Yellow), in the time above specified, I decidedly agree with your correspondent in *most* of his statements, and consider the *exterior* qualifications of a good Game cock to be nearly as follows:—

Head thin and long, or, if short, *very* taper; large, full eye; beak crooked and stout; neck long; body short and compact, nearly *heart-shaped* when looking down from above on his back, or, perhaps, more nearly approaching the form of a box-iron for ironing linen—broad at the shoulders and narrow at the tail; breast round, as a sharp-breasted cock carries a good deal of useless weight about him, and never has a "fine forehead;" thighs short, firm, and stout, and placed *well up to the shoulder*, under the broadest part of the body, which will make a cock stand wide on his legs, and give him a more commanding appearance; besides, when a cock has long thighs, which hang dangling behind him, he never has a good carriage. Legs rather long and stoutish, and if corresponding *nearly* with the colour of the beak, or under beak, so much the better; feet spreading and thin, with long claws and nails. With regard to carriage he should be upright, but not stiffly so; walk stately; wings well prolonged, protecting the thighs; tail long and well sickled. What are vulgarly termed "high-rumped" birds are objectionable, as the whole back should be straight. Birds that carry their wings upon their backs, like Geese, are also objectionable, as are those with *white* gills or "deaf ears," as they are technically termed. Cocks weighing from 5 lbs. to 5½ lbs. are generally the most symmetrical, as combining activity with strength.

The hen ought to correspond with the male bird in all the above particulars. Your correspondent is right in insisting that a "fine head" is essential for a *deserving* prize bird; but I cannot agree with him in liking white or blue legs for any variety of Game, they being too much like the common Barn-door fowl, the legs of which are nearly always white or blue.

Yellow and olive, or willow, are, in my opinion, the best colours; but the olive, or willow, are most decidedly the *general* favourites, and have taken almost all the cups. In the midland counties *yellow* legs are disliked, for what reason I never could understand. I consider a *bright yellow-legged* Black-breasted Red cock to be the perfection of a Game fowl, if he "cuts out" darkish, has dark nails to his claws, and the *fluff* or *down* at the root of the tail *not white*, but of a dusky colour, harmonising better with the red plumage, the bright yellow legs showing off the black breast so well. This description of bird ought *not* to have a *single white feather about him*, which many of them have from injudicious crossing with the *Piles*.

With regard to *Duckwings*, if a *Yellow Duckwing* cock, he ought to have a clear straw-coloured hackle, copper or straw-coloured saddle, and a perfectly black breast and tail (as your correspondent says), and with *yellow* legs; but if a *Grey Duckwing* he should have, in my opinion, a clear *white* hackle, saddle as pale, or as near white as possible, perfectly black breast and tail, with *olive* legs. There is a great distinction between the *grey* and *yellow* varieties of Duckwing Game, the *yellow* having been originally bred from the Black-breasted Red cock and Grey Duckwing hen, crossed again with the *Yellow Birchen* cock—not a Duckwing. The true grey fowls, as may be perceived from their "cutting out" so dark, are more closely allied to the black varieties, as also are the *Brown Reds*, which are *nearly* black when just hatched, whereas the *Black-breasted Red* chicken when hatched is yellow, with a dark brown stripe down the back; Duckwing chicks when hatched being of a paler yellow, with the stripe nearly black. As to the hens, hackle *nearly* white for *Yellows*, striped with black; body, &c., slaty or bluish grey, with a *yellow leg* and a "robin breast." The Grey Duckwing hen, hackle *quite* white, with more black in it, and a much *paler* breast; legs *olive*.

I have only attended *one* Poultry Show this season (that

of Colchester), at which I remarked that the first-prize single cock was awarded to a Black-breasted Red with a very clumsy head, a bird that ought not even to have been commended. The *hens*, also, in the first-prize pen of adult Reds were very clumsy about the head. The first prize in Black-breasted Red chickens was well awarded, as was also the first prize for adult *Piles*. It is clear to me that Game fowls ought to be judged separately from the other classes by a known, old, and good breeder of their kind, insisting on a "*good match*" being the *first* consideration; and some of the Judges, though they may do their best, are utterly incompetent to judge Game fowls, as even in the *single cock* pens, where no match is required, prizes have been awarded to the wrong birds.

I may as well remark that, having been in India, Sumatra, and Java, and having seen the Indian Game fowls, as well as several of the wild species, I consider our English Black-breasted Red breed to be very little removed from the original and primitive wild stock. The Indian Game are nearly *one-third* smaller, the Indian cock being invariably in all specimens that I have seen a *yellow-legged* Black-breasted Red, but with *dusky-coloured* "*down or fluff*" at the root of the tail; the hens Partridge-coloured, with *blue* or *willow* legs. Some of the hens I have seen approached *very* nearly to the colour of the *Yellow Duckwing* hens, but the majority are like our Black-breasted Red Game hens in colour.

What the "*NORTH COUNTRY AMATEUR*" says about the *white-legged* Game being *white fleshed* I consider holds good with every variety of English Game fowls. I myself *like* to see the *skin yellow*, but then the flesh is invariably white. I fancy the *yellow-skinned* birds are the "*fieriest*," and their hens generally lay eggs approaching to a *buff* colour, which I prefer to a *white* egg.

I will now just *enumerate* the kinds of Game fowl most in vogue in these eastern counties. They are—Black-breasted Reds (1); Brown Reds (2); Yellow Duckwings (3); Berrybirchen Yellows (4); Silver Duckwing Greys (5); Dark Greys (6); Red Duns (7), and Orange Piles (8). The Yellow-legged Black-breasted Reds seem to be peculiar to the northern and eastern counties (including Lancashire), though I have seen them in Devonshire.

I cannot conclude this very long dissertation better than by doing so in the words of your correspondent: "Having no better apology to offer than the interest I take in the *old English Game breed*, which I firmly believe for *beauty*, and certainly for utility and economy, is entitled to the *first* position among English domestic poultry, the *hens* being excellent layers and mothers, the eggs richer than any other variety, and the chickens more delicate for the table. Cock chickens certainly give a little trouble from their constitutional pugnacity, but *that* every good breeder knows how to overcome."—NEWMARKET.

P.S.—Any information that the "*NORTH COUNTRY AMATEUR*" thinks I can give him I shall be most happy to do through the medium of your paper, or by name if required.

OUR LETTER BOX.

A NORTH COUNTRY AMATEUR, whose communication appeared on the 3rd instant relative to "Game Fowls," will oblige us by sending his direction to us. We have a letter for him from a gentleman, who requests us to forward it.

GOLDEN POLANDS.—A Poultry Lover has a pullet of this breed only four and a half months old which laid five eggs weekly during the winter. Apply for eggs to some one who advertises; there is no deficiency of choice. Give your poultry whole barley every morning, and a mixture of barley-meal and pollard every evening. You will have seen what has been said lately about the crest of the Golden Poland.

EGGS SENT BY RAIL (A. Z.).—If properly packed they will travel for many hundreds of miles, and produce strong chickens afterwards.

CANARIES.—Will any friend kindly favour a brother fancier with the required points of prize birds in the Belgium varieties? Also point out the merits of the successful birds at any of the late Canary Exhibitions.—C. C.

ROTTEN FEATHERS IN PIGEONS (J. Elliot).—Rotten feathers arise from several very serious internal complaints; but it is impossible to state what the disease is in these cases without further information. If a dead Pigeon be forwarded to the office I shall be willing to examine it, and state the nature of the disease.—W. B. TEGETMEIER.

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WEEKLY CALENDAR.

D M	D W	MARCH 3—9, 1857.	WEATHER NEAR LONDON IN 1856.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
3	TU	Ash (<i>Fraxinus excelsior</i>).	30.577—30.530	44—35	N.E.	—	43 a. 6	42 a. 5	2 28	3	12 8	62
4	W	EMBER WEEK.	30.539—30.475	44—33	N.E.	—	41	43	3 42	8	11 55	63
5	TH	Sea Buckthorn (<i>Hippophae</i>).	30.286—30.177	45—33	N.E.	—	38	45	4 40	9	11 41	64
6	F	Dog's Violet (<i>Viola canina</i>).	30.197—30.131	44—27	N.E.	01	36	47	5 20	10	11 27	65
7	S	Hairy Violet (<i>V. hirta</i>).	30.350—30.230	44—21	N.E.	—	34	48	5 47	11	11 12	66
8	SUN	2 SUNDAY IN LENT.	30.341—30.297	52—26	S.E.	—	32	50	6 9	12	10 57	67
9	M	Small Perriwinkle (<i>Vinca</i>).	30.232—30.131	51—25	W.	—	30	52	6 21	13	10 42	68

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 48.9°, and 32.7°, respectively. The greatest heat, 61°, occurred on the 7th, in 1841; and the lowest cold, 15°, on the 4th, in 1852. During the period 122 days were fine, and on 74 rain fell.

WOO'DSIA HYPERBO'REA.



THIS has been called *Acrostichum alpinum*, *Ceterach alpinum*, *Polypodium hyperboreum*, *P. Arvonicum*, and *Woodsia alpina*. By some botanists it is considered merely a variety of *Woodsia Ilvensis*. In English it is known as the *Alpine Woodsia*, *Rounded-leaved Woodsia*, and *Hairy Polypody*.

Its roots are fibrous, very deeply penetrating, black, and tufted. Fronds narrow spear-head shaped in their general outline; the lower third of each stem is without leaflets, but having a few hairs and light brown chaffy scales. The stem is united to the root by a joint, from which it falls off when the frond decays in autumn. Leaflets in pairs, quite or nearly opposite, smooth, triangular in their general outline, but with the angles rounded; deeply lobed and scolloped; mid-vein not strongly marked, and its side-veins are simple or only

two-forked, reaching nearly to the edge of the lobes, and not far from the end of these side-veins is the fructification. This consists of from six to ten circular masses on each leaflet; they are large, light brown, and usually increase in size until they run together. The cover (*indusium*) of each mass is divided into such numerous segments that the fructification seems imbedded in hairs. This will appear fully in our woodcut of *Woodsia Ilvensis*.

In *England* and *Ireland* this very rare Fern has never been found.

In *Wales* it has been discovered at Clogwyn-y-Garnedh and Moel Sichog, on Snowdon, at an elevation of not less than 2,500 feet. It is said to have grown on Glydr Fawr, Caernarvonshire, but recently it has been sought for there without success.

In *Scotland* it occurs on Ben Lawers, Ben Chowzie, and the Clova Mountains; at Craig Chailleach and Mael Ghyrddy, in Perthshire; and in Glen Fiadh, in Forfarshire.

We think it probable that this Fern is the *Filix Caledonica* mentioned in 1704 by Ray, in the third volume of his *Historia Plantarum*, as being in the museum of Mr. Petiver. Whether this be so or not, Ray mentions it in the second edition of his *Synopsis Stirpium Britannicarum*, published in 1696, where it is described by Mr. Lhwyd, its discoverer, as *Filix alpina pedicularis rubra foliis subtus villosis* (Alpine Fern, with red-rattle leaves hairy underneath). It was described and engraved during the same year in Plukenet's *Almagestum Botanicum*, 150, t. 89, f. 8. Mr. Lhwyd says he never saw it except on wet, lofty rocks called Clogwyn-y-Garnedh, near the top of Snowdon, and that it is rare even there. It springs there from the edges of the rocks, not erect, but somewhat reclining. Dr. Richardson adds, in the third edition of the same *Synopsis*, that "it grows on a moist, black rock almost at the top of Clogwyn-y-Garnedh, facing north-west, directly above the lower lake."

We will give the cultivation in our next, when we describe *Woodsia Ilvensis*, for they require similar treatment.

THE new agricultural weekly journal, THE FARMER'S RECORD, announced in our advertising columns as to appear next Friday, the 6th, will be a first-class paper. It will be distributed all over England by the railways on Friday afternoon, with reports of that day's London

Markets. Its Editor, J. Lockhart Morton, Esq., is a thoroughly practical farmer, as well as a man of science and literature. This is proved by his letters in the *Times*, which demonstrate his sterling knowledge of agricultural interests, by his being appointed to lecture on "Agriculture and Landed Property" at King's College, and by the *Agricultural Gazette* being placed temporarily under his care; but, of course, his connection with that paper has now ceased.

THE February Meeting of the ENTOMOLOGICAL SOCIETY was held on the 2nd of that month, H. T. Stainton, Esq., in the Chair. Mr. Samuel Stevens exhibited a box of beautiful Moths and Butterflies recently received from the river Ega, in Brazil, collected by Mr. Bates. Among them was a splendid new species of *Callithea*, and a considerable number of micro-Lepidoptera. Mr. Bates had also been fortunate in observing the transformation of a species of *Erycina*: no satisfactory observation had been previously made of the metamorphosis of this family. The specimens contained in this box were in excellent preservation, and destitute of mould, although they had travelled 1700 miles by land, and had been six months on their journey to this country. This circumstance led to a conversation on the general difficulty experienced in preserving specimens in closed boxes in hot, damp climates, where mould is so rapidly developed; on the different species of moulds by which insect collections are attacked, and the best means of preventing them.

Mr. Ianson read a note on the nomenclature of a species of the *Staphylinidae* belonging to the genus *Bledius*, recently captured by Mr. Parfitt on the Devonshire coast.

A paper was read by Mr. Newman on the binary species of insects, suggested by the well-known fact, that in many genera of Lepidoptera two of the British species exhibited a very striking resemblance to each other, as in the two Clouded-yellow Butterflies, the two Burnet Moths, the two Hornet Moths, the two large Red-underwings, &c. Mr. Stainton stated, however, that this binary theory was untenable in many of the instances adduced, as there were continental species which were intermediate between our two British species; and Mr. Lubbock asserted that Mr. Newman's observations proved nothing more than that these were instances of a very close affinity between such two species, and that nobody had ever doubted that the closest affinity does exist between two closely-allied species.

Mr. Newman also read a paper containing the description of a supposed new species of *Carabus*, captured in the Crimea by Mr. Blakiston, and which he proposed to name *C. Blakistonii*. No attempt at discernation from the allied species was made, and Mr. Waterhouse remarked that such a description in so extensive a genus was nearly worthless. Had such a comparison been made the author would have avoided some evident errors, as, for instance, where he described this new species as having large foveæ, whereas, in

comparison with others of the genus *Carabus*, the foveæ were of small size.

A conversation took place on the use of pins coated with varnish for the prevention of the growth of verdigris and the exudation of grease, and some of the members present urged the propriety of using different coloured pins for different localities, such as Ireland, Scotland, Wales, and England.

A number of donations to the Society's library since the last Meeting (presented by the Academy of Madrid, the Zoological Society, Messrs. Saunders, Murray, Zuckhold, &c.) were announced, and thanks ordered to be given to the several donors.

MEMORIAL OF AN UNFORTUNATE CAMELLIA.

(Concluded from page 304.)

POOR Camellia, taking heart, I suppose, at the departure of the late severe winter, has consented to tell the rest of her woes, which I here beg to relate.

"You will remember, when I left off my former tale, I had so much recovered as to produce four fine blossoms. I was now taken to the drawing-room, put into a fine china pot, and dressed round with moss. Here I was much admired by the ladies; but really, fine as things were, I would much rather have been in some cool pit; for they so packed me with moss that my soil could not perspire or become mellow, and I found they were committing errors in their mode of watering. But my blossoms soon began to fade, and so I escaped from this fine place, and got back to the greenhouse again, and rejoiced I was to get rid of the load of moss. However, I received a sort of compensation during the next spring and summer, for I was, indeed, very well used. My soil became filled with hundreds of beautiful fibres. I was watered freely, and the water passed equally through the soil, and thus served every fibre alike. It is astonishing the quantity of roots I made, and if ever they omitted giving me my due allowance of water I began to feel a very sharp appetite, and a jealousy lest I should be short of food; for the pot I was last placed in was only about four inches and a half in diameter, and I was now nearly eighteen inches high, with a good many shoots. The following spring I was what they call well bloomed; I forget how many blossoms, but I remember being taken much notice of. I already began, however, to sigh for a larger pot, for at times I found that the water they administered did not thoroughly penetrate the firm ball of earth, now becoming blocked up with fibres. This spring my master was advised by a knowing neighbour to give me a larger pot; but 'No,' said he; 'I always like to let well alone.' I, however, produced some nice young shoots again; but it was soon discovered that my foliage had decreased in size, and that it was fast losing that fine, glossy, dark green which I had attained on the recovery of my health. My master concluded I had been too much chilled with the ungenial summer, which had been both cold and rainy; but, alas! he little thought that the interior of my ball was a mass of dust, and as hard as a block. So I was removed to a warm situation in the greenhouse, where unluckily they placed me very near to where the fire entered, and I was stationed on a shelf not far above the flue. Worse treatment I could scarcely have met with, and in a few weeks my poor skin was studded with a scaly insect, to which our family, when out of condition, are rather liable. This last visitation began to dishearten my master, who took much pains in brushing off my insect foes. In this situation and awkward

plight I remained until the beginning of February, when my poor blossom-buds became loose in their sockets, and fell off one by one, and no wonder. I was watered almost daily through the winter; but, as my soil had become rifted by the dry heat, most of the water passed off through the chinks without ever moistening the main bulk of my roots. It was now determined on that I should have a larger pot. So to work my master went, and having seen the nurseryman repot me originally, he felt tolerably competent, I suppose, for the task. However, he committed some grave errors, which did serious mischief. When first the nurseryman potted me I had not required what plant growers term a 'ball of earth,' and he had to strew fine compost, sand, &c., amongst my delicate fibres, which at the time did me much good. My master having, I suppose, observed this, made up what he thought a nice compost, and having passed it through a sieve to make it look uniform, felt persuaded he had acted most judiciously. Not so, however, as the remainder of my tale will show. This fine compost was shook around my old and parched ball by sundry thumps on the potting bench, and when finished I was sprinkled over with a fine rose water-pot,—the practice, my master said, of every good gardener on every occasion.

"Now commenced the second great trial I was destined to undergo. It was supposed that I should soon show a change for the better, and my master was fondly dreaming of a nice bloom in the ensuing spring; but how were they astonished to find that I could scarcely produce a young twig, certainly not a perfect one; for the tops of my branches alone produced a few lean shoots, and on these the leaves were but half the size they had been when I was in health; and thus I might be said to pine away for many months. My master, having despaired of my recovery, seldom looked at me, but ordered Tom to water me occasionally.

"After a lapse of several months I noticed him one day parading the greenhouse path, with a book in his hand, at which he was looking very intently. Tom—the man-of-all-work, who 'groomed' the horse, fed the pigs, pumped water, kept the cook in temper, and occasionally did a bit of gardening—was watering his plants for him. After reading a little while he called Tom to him. 'Tom,' says he, 'I've found out what ails the poor Camellia.' 'I'm nation glad, sir,' says Tom. 'Why, here I have the last number of THE COTTAGE GARDENER, which I will lend you when you have time to read, and which has taught me more sound gardening than all the books I ever bought; and here is a capital article on the Camellia by some of those gentlemen who have whistled at the spade. The writer, whoever he is, has my case to a fraction. I'll be bound he has gone through the same difficulty. He calls it *pot bound*, Tom; and says that when Camellias have grown freely for some time in cramped pots they acquire a ball so solid that it would take almost a bill-hook to separate it, and that repotting or shifting, as he calls it, under such circumstances, requires much caution, and must be performed either by a regular practitioner, or by some one who is quite familiar with the proceedings necessary. I am now quite assured that this is our exact position, and I wonder that I had not seen it before. So now I have made up my mind to get Mr. A.'s plantman to take it in hand; for you know, Tom, I would rather give half a guinea than be beat in this way, and, besides, I still feel a partiality for my poor Camellia.'

"Tom was delighted at the notion, and said he had heard say that these nurserymen's propagators and plantmen were so knowing that they could grow a plant as well without roots as with them; nay, could grow a plant upside down; in fact, could do anything with a plant, come from where it would, and, in his opinion, had secrets which nobody else ever could or would get at.

"I must now hasten on to the end of my pitiful tale; but before I conclude I must relate what this plantman did; and although I am not yet by any means fully recovered, yet I have sufficient evidence that I have again received the assistance of one who quite understands my position.

"My master took care to be present when my new friend arrived, and watched his proceedings with much interest.

"Without any farther ceremony he marched me off to the potting bench, turned me out of my pot, felt the ball all round as a doctor would a pulse, and then all of a sudden began to liberate the new soil which had been added when I was repotted. Turning to my master he said, 'Let me advise you, sir, as a first step in gardening reform, to burn your sieves or riddles; there is no good plant culture where there is much riddling or sifting.' Having liberated all the new soil, and left nothing but the old hard ball, he threw me into a bucket of water for an hour, and directed my master to listen to and watch the air bubbles gurgling through the water. 'There, sir,' said he, 'you told me the plant had been well watered. You see that the interstices in the ball are filled with dry air, and the bubbles show that the water, by its gravity, is displacing them.' 'But why,' said my master, 'could not all the watering I have given displace them?' 'Why, sir, because your water never entered the hard ball, but escaped through your porous new soil, which, as you see, has at last become mud.' Poor Tom stood with his mouth wide open, feeling assured that my new friend was right, though he said afterwards that he could not for the life of him quite understand all he said. However, I was taken out of the water and repotted, the operator merely asking for some old and dryish turf. This he chopped tolerably small with a pot-board knife, and, after taking immense pains with the drainage, crammed this turf in almost as tight as he could pack it. The rest, he said, was merely a work of time; it would, he said, be more than a year before I regained my health.

"Before he left he wrote my master down a few maxims on Camellia culture, to which he directed his particular attention; and amongst the rest reminded him that our family are not partial to intense sunlight, especially from the moment they have done blossoming until the young blossom-buds are as large as peas; but he also advised him that it is in vain to talk of this plan or that as regards the management of the atmosphere whilst the root is wrong. Our family in general are somewhat thirsty, but we do not like the water to lay long on our stomachs; it must speedily pass away, and in thus passing it produces most desirable effects. We enjoy abundance of air moisture, and there is nothing we abhor more than to be perched up on an elevated stage, with a hot sun overhead and heated pipes beneath us. There needs nothing more, under such circumstances, than such a bad state of root as I was found in to complete our ruin. If I must pass my life in-doors as a prisoner, there is no structure I should prefer, however fine, to what gardeners call a cold pit. Here, with a few mats or straw over the lights, I could endure the hardest winter, and should never complain of two or three degrees of frost, which I could better endure than from seventy to eighty degrees of sun and fire heat combined.

"Some people may think, as we are so partial to old chopped turf, and abhor rotten manures in a compost, that we like a starvation system; but they are much mistaken. We are delighted with occasional waterings of liquid manure, but it must be quite clear and weak, and the roots in good condition to enjoy it. I at one period received some guano water, about one ounce to a gallon, once a week, and, bad as my appetite was, it did me much good, and I could but think how I should have

enjoyed it if they had not destroyed nearly all my roots. As for the scale, I have heard my dear mother urge that if people would but make a point of using a preventive once a year we should seldom be troubled with it, and it should be applied the moment we have done blossoming. All that would be necessary would be to syringe us daily for about a week with soft-soap water, about one to two ounces to the gallon—not more.

"I may now conclude my grievous history, and can only hope it may furnish useful hints to those who desire to cultivate our family according to their natural habits. Adieu!"

In thus concluding the history of Camellia I would beg to recommend to those who are unsuccessful a close consideration of the cultural principles so emphatically pointed out. It is really astonishing that a plant with such simple and decided habits should by many be so misunderstood.

R. ERRINGTON.

MESSRS. WEEKS AND CO.'S HORTICULTURAL ESTABLISHMENT, KING'S ROAD, CHELSEA.

(Continued from page 367.)

FOLLOWING the run of the main flow and return pipes, after passing the stoves we find two ranges of pits lying *across the line of the circulating heat*—that is, the main flow is northwards from the boiler; and these ranges of pits stand east and west, so that the flow "cuts across" the pits in a straight line; and yet they could grow Pine-Apples or young Heaths in all these ranges, with sufficient top and bottom heat for Cayenne or Black Jamaica Pines; or, by turning the valve (patent) for bottom heat and the valve for top heat, and then covering the flow and return pipes across the pit with sawdust, you make cold pits of them in two seconds. Now, this is worth studying. The pipes which give the bottom heat are much deeper than the great flow pipe, and those for top heat are considerably above the level of the main flow. They say you cannot get circulation below the level of the return pipe if it enters the boiler at the bottom, but that is only a figure of speech. You can here get perfect heat and perfect circulation, and enough of both for any plants a full yard below the level of the return pipe, or flow in any part of the nursery, or of the 5,000 feet of piping which are heated by the one boiler. This is easily managed anywhere. The top of Weeks' boiler is just below the level of the return pipe, and the boiler itself is above five feet high; therefore you could get bottom heat or circulation at any depth below the flow pipe and the bottom of the boiler. No matter what the shape or size of a given boiler may be, if it is a close boiler the return pipe should enter at the lowest part, or bottom of the boiler, and rise *immediately*, to be just under the flow pipe. That is the first grand secret. Then let us suppose the flow and return pipes close together on starting from the boiler. They should neither rise nor dip one inch from the level line in all their course—that is the next grand secret. They are not exactly so level in this nursery, but they are not far from it. When you want more heat in a house or pit than the flow and return pipes give, or when you want bottom heat in addition, both should be supplied *from* the flow and return pipes, not *by them*, which is a grand mistake, or rather, an expensive no mistake; for the bottom heat you must consider before you set the boiler. Say to yourself, My flow and return pipes must go on the level through the front of a plant stove, an Orchid house, five Vineries, two Peach houses, then a Pine stove, Pine pits, with Melon and Cucumber pits or houses, say all in one straight line as they are read. Whatever the depth below the level of the pipes may be at which

bottom heat is to be supplied to the Pines, Melons, or in any of the stove houses, the bottom of the boiler should be set as low as that, and a little lower would be all the better; but a flow and return, which would heat an Orchid house, would surely be too much for any of the Peach houses on this line; and this raises another question, which has puzzled a thousand gardeners before now, but, nevertheless, is as simple as the circulation of hot water. Water on the move will pass through a one-inch pipe as fast as it would through a four, five, or ten-inch pipe; therefore a much less pipe will do to carry the circulation from the stoves through the Peach house to the Pine stove; or say that four-inch pipes did for the stoves and first or early Vinery, three-inch for the rest of the Vineries, and two-inch for the Peach houses, and then up to the four-inch pipes on entering the Pine stove—a mere supposition to show the principle on which Mr. Weeks has managed to heat all his houses, pits, and frames on the most economical principle from one boiler. When he wants more heat in a house than the direct flow and return pipes can give he plugs both pipes, and with an inch pipe connects so many more pipes, and at every connection is one of his patent valves, which screws up and down, to increase or diminish the rush from the main flow. In very hard weather every valve is up, and every pipe is at work; but on the slightest rise of the weather-glass some of the valves get a turn or two, and the moment they perceive a change in the weather all valves which let flow into the greenhouse and to the half-hardy plants are screwed down tight, when they stop all circulation, and then less heat is supplied to the boiler.

I got hold of the man who feeds the boiler, and cross-questioned him as if he were before Lord Campbell himself. When it was "tremendous" cold he liked to "look" at the fire oftener than three times a day of twenty-four hours; the consumption then would be just one bushel of best coke in the hour. No matter how much he put on at one time, he could "feed her" in two minutes, and he showed me how. He filled a barrow with coke just outside the shed where the boiler is; the top of the boiler is just level with the floor of the shed; it has a lid which comes "off and on" like the lid of a tea-kettle; he took it off, and we could stand over the opening and *look down* on the fire without smoke or smell of gases affecting us in the least; and this very much surprised me, but is accounted for by the great heat of the chimney, and the free draught "catching" sidewise all the gas, and smell, and smoke; but no smoke was seen. The boiler, as one may see from the engraving in Messrs. Weeks' advertisement, is made of four-inch pipes, about five feet long; they are socketed at top and bottom into an iron hollow frame, as it were, and there are two rows of them standing a little apart. The outer row had twenty-two pipes, and the inner row twenty; they stood an inch and a half apart in the bottom frame, and hardly an inch in the top frame, which makes the boiler a little conical. Just round the pipes fire bricks and fire "clamps" are used, all the pipes being free for the fire to play round them; and they were as clean as a "bright" grate, from the strength of the fire burning all the "products of combustion," as the saying is.

As I stood over the burning blaze I felt confident a man might feed it from a sack over his shoulder like a coal-heaver, with his face just over the centre of the fire; but it is fed from a barrow by turning the barrow over as in any other kind of emptying. Then there is an ample "staircase" down to the ash pit, and there is a close door; but all that is done below is poking, and getting out clinkers and dust ashes.

In one sentence, I may sum up that I have seen as much of hot-water systems as any gardener whatever, and I would undertake to "put up" every pipe, and

valve, and elbow, and turn in this nursery *with my own hands*. I could make every joint in five different ways, and I say candidly that I never saw a more simple, a more efficient, or a more economical plan than this.

The two ranges of pits through which the flow and return pipes pass at right angles are full of Vines in pots, one being filled entirely with Muscat Vines, just breaking the bottom eyes to which they were cut, and the other pit is full of the *Victoria Hamburg* and *Wilmot's Black Hamburg*; and there is a large stock of all the leading Vines—beautifully-grown canes—in other parts of the grounds.

The next building is a span-roofed house in three divisions. Here are large plants of well-grown Roses, of all the sections of pot Roses—some on their own roots, and some on the Manetti stock. Close to this is another span-house, full of young Heaths in store pots, and beginning to be potted off. They consist of the best leading kinds, as *tricolor*, *Hartnelli*, *triumphans*, *Massoni*, *retorta*, and others less difficult to propagate. The next is a propagating house for hard-wooded and stove plants, the shelves being filled with early Gloxinias, Gesneras, and Achimenes, and such things just “on the start.” Next to this was a large stock of a new or newish old *Ageratum*, with white flowers, which hold on all the winter till the turn of the new year—a very useful plant, which is as easy to have as the bedding *Ageratum*, and nearly as cheap; also many more of the best old plants which are almost forgotten, and which are re-introduced here from continental gardens. The old *Aaron's Beard* is among them. Dozens of *Saxifraga sarmentosa* for hanging baskets. The next house is filled with forcing and forced Geraniums, *Alba multiflora* and *Gaunlet* being yet the two which stand most forcing; and the next house is devoted to a general collection of Pelargoniums from the best raisers here and abroad; and after them a house full of Cinerarias, seedlings and named kinds, propagated by suckers and cuttings; and after seeing so much of soft-wooded plants in such fine robust health, I must mention one great secret in heating, which seems to tell well, and pay better, and that is, there is nothing so good for heating plant houses as *warm pipes*, not *hot pipes*. Mr. Weeks uses so many of them that they need never be very hot. It seems a great mistake to go to the expense of a good boiler, and then to stint pipes to it. Mr. Latter and Mr. Kidd have shown the secret of forcing Cucumbers by steaming *covered pipes*; but the pipes here can very safely be steamed without a covering, as they are never too hot for such work. Bedding Geraniums stand next to Cinerarias, and end the right-hand wing and the farthest end of the hot-water pipes. They are particularly rich in stock of variegated Geraniums.

We now turn to the west or left-hand wing, and begin with Camellias, Rhododendrons, *Laurestinus multiflorus*, and such other “winter-garden” plants as we noticed in the conservatory; and they are here massed in groups in the same style, with serpentine and straight walks “in and out” between the masses—an excellent way to see the whole, and to show them off.

In the new grand winter-garden house I expect we shall have a touch of the Russian and Prussian styles of winter conservatories; and, by-the-by, I heard such good news of our son-in-law, the young Prince of Prussia: “He is so fond of plants.” Mr. Gruneberg knows them all over thereabouts, and he was nearly knowing the last of it at Vienna in 1848. The rebels smashed every pane of glass where he was, and knocked everything to pieces about their ears—a kind of forcing we are not up to in London.

The *Camellias* were just coming in for cut flowers, for which and for furnishing they have a constant demand for all kinds of early things. Then ranges

of pits to correspond with the right side: here are all the young Epacrises, Acacias, and that style of New Holland plants. Also another range of Vine pits, and the best plants of Muscat Grapes, almost in leaf; and next to them, under an east wall, is plunged and mulched a very large stock of one-year-old Grape Vines of sorts. The next house is in three divisions, and span-roofed. One division is for flower forcing for sale and forcing for cuttings: the first batch of cuttings of flower-garden plants was just ready for potting off by the 1st of February. *Lobelia speciosa* in hundreds; Verbenas ditto; and I saw a dried specimen of a perfectly *blue Verbena*, with a white eye, from the Continent, and if it is as blue when it is fresh as it was in the dried state it is a true blue at last. Mr. Gruneberg told me he bespoke plants of it to come over this spring. The rest of this house was filled with Geraniums, Heliotropes, Hydrangeas, and all that style of furnishing plants, with Camellias, Azaleas, and Rhododendrons. But I ought to mention that in this winter propagation they never use water in the tanks for bottom heat, that being too damp at that season—merely the dry pipes lying in the empty troughs; no bell-glass for any of the cutting pots, and *no big pots* for cuttings in winter. A person ought to be well up to the practice before venturing on large pots for cuttings at any time. Here are Germans and Frenchmen, Londoners and all, and the whole lot cannot muster courage enough to use larger pots for cuttings than small 48's and 60's in winter—just what THE COTTAGE GARDENER has been preaching up for years. Next is the New Holland house—the House of Commons in gardening; and if you take the heads of families and the genealogies in both houses it is singularly curious how nearly parallel the analogies run in both—Epacris, Chorozema, Acacia, Dillwynias, Eriostemons, Everlastings, endless Pea-flowering tribes, prickly or sharp-pointed-leaved plants, soft and downy-leaved, silvery grey, green, and almost blue—like blue Gum trees; and there is not a useful section in parliament, or hardly a family name which you could not point to, even in its politics, in a New Holland house such as this is; still it is rare to meet or see a new member in a New Holland house. A large lot of *Magnolia macrophylla* is wintered “below the bar” in this house, and a host of standard Pomegranates took up their quarters in it also last autumn on their arrival from the Continent. Then follow some hundreds of lights in cold pits, or ranges from which frost is merely excluded, filled with a fine stock of bedding plants—scarlet and variegated Geraniums, Cupheas, Calceolarias, Verbenas, Petunias, Senecios, Lobelias—all of the best kinds; and also a very fine stock of Hollyhocks in pots, and Dahlias, which were being then removed into heat for cuttings.

The nursery outside the houses may be from five to six acres, and is well filled with such things as bear the London smoke best; but all the Pinus tribe they are compelled to keep under glass in a cold house by themselves. Roses and climbing Roses seem to do well enough here; also common evergreens and the usual shrubs and hardy climbers, as Clematis, Honeysuckles, Bignonias, Aristolochias, Ivies, all in good looks for the time of year. Also a collection of Strawberries, some being in pots and frames with Lilies, so as to get at for forcing, be the weather what it may. The florist departments are on either side of the principal walks, and no doubt will be very gay in summer with Hollyhocks, Pinks, Carnations, China and German Asters, and, best of all, with bedding plants. But all this is mere surmise, and we must see such things in summer before we can decide how far it is likely to pay. But for the rest I think these cursory remarks will cover the extent of this new establishment, or rather, the pre-

sent management under Mr. Gruneberg's directions; and for such as contemplate heating on Mr. Weeks' plan I would recommend a personal inspection of the whole arrangement, which is very complete, powerful, and economical. D. BEATON.

WINDOW GARDENING FOR SPRING.

WHATEVER the general influences and attractions of plants and flowers, these never muster in such strength around and among our warmest sympathies as when we can call them our own, and have with our own hands tended and ministered to their wants. We may greatly admire or deeply reverence, but we can scarcely love that for which we can do nothing. Hence many of our friends spend their happiest hours in their garden—not altogether because of visions of prospective advantage—not alone because they are thus naturally led to think on the kind, the good, and the beautiful, but also because they feel that they have it in their power to do their *protégés* a favour, and perceive that, so far as mere growing existences can express their gratitude, their plant friends are not slow to thank them by their improved and flourishing appearance.

In these days of huge gatherings in towns many never know the pleasure of turning up the soil, and tending and watering plants in a garden; but almost every one has windows where plants can be grown inside in pots, vases, &c., in winter, and outside and in balconies in summer. If an exception exists, it is in the case of those truly wretched people who are obliged to herd and huddle in cellars where light, so essential to plants as well as human beings, can hardly ever find an entrance. Such exceptions will cease to exist when, as a community, we are all thoroughly convinced that neither physically nor morally can we stand alone, uninfluenced and uninfluencing; but that the pestiferous miasmas, brooded over and watched in the dark and damp-floored cellars, will find their way to the lightsome, carpeted parlour. Some of the most enthusiastic, determined gardening has been displayed on leads and in attic windows. Even there, as sometimes in elevated regions, the odour of flowers is all the sweeter, and their colours more intense and pure, from being nearer to the sun, and if sanitary improvements continue, from enjoying a purer air, than if they were located at the windows of the first floor. In such upper rooms are many whose few carefully-tended plants are almost the sole unbroken links that bind them in sympathy with mankind, and with all that is pure and elevating. Were it not a well-known fact that truth has stranger revelations to make than have ever been depicted in romance and fiction to tickle and amuse a morbid taste, we might ask that pretty plant, on whose leaves some pearly tears are dropping, to tell us its story, identified as it has become with recollections of green fields, a cottage home, the listening to a father's counsels, and the kneeling beside a mother's knee—memories these that have nerved to purity of heart and integrity of conduct, though trials were numerous and temptations strong. Or, if you preferred it, you might listen to that bushy, vigorous plant, thriving so nicely in the lidless, cracked teapot—and all the better because it was cracked—as it told you how the old, decrepit basket-woman that shivered for hours at the corner of the street, with scarcely one passenger kind enough to notice her wares, felt her deadened sympathies awakened and softened, and her heart more tender and beating more kindly for humanity, neglected as she had been, whilst she ministered to the wants and feasted on the beauties of the last living, growing thing she could call her own. In palaces as well as in cottages, in parlours as well as in garrets, in villages as well as in cities, plants are fitted to exert a beneficial influence, as, unlike mere works of art, their tiniest and simplest forms bring us into direct contact with the handiwork of the All-wise and the All-good. But though benefit and pleasure may be obtained merely by looking on their beauties—and I might be selfish or professional enough to wish that such pleasures were far more general, by plants taking a higher and more extended place, as mere furnishing and ornament, than they have yet done—still I think such pleasures will be enhanced in the case of those friends who, either from choice or necessity, do almost everything themselves for their plants that they require.

Whether in this I am right or wrong—and I have mentioned it for the purpose—that the pleasures not merely of having, but of cultivating plants may be generally realised, there can be no impropriety in alluding to some of those points which may be interesting to all who wish to have plants in their windows.

1st. ARE PLANTS IN ROOMS PROMOTIVE OF HEALTH AND CHEERFULNESS?—In the case of all living rooms I answer in the affirmative. Delicate people complain of headaches and sickness from their presence, and will, therefore, have them excluded, and rightly too. Plants with powerful odours will sometimes produce that effect. I have known ladies that could not go near a Jasmine; others that hated Musk; some that would faint at the propinquity of a Heliotrope, and others that only approved of Mignonette when not nearer than a furlong. All of us have something peculiar in our likes and dislikes. It is rather ill-natured to consider such peculiarities as mere fid-fad imaginaries. Common prudence would say, "Keep at a distance from whatever harms you." In bedrooms that are shut close at night I would advise dispensing with flowers having powerful odours, even though agreeable to the olfactory nerves of the owner. If he prefers retaining them it would be advisable to place them nearer the floor than the couch on which he reposes. But why not have air in the sleeping room at night, instead of shutting it up close, when the weather is at all favourable, and thus serve the interests of the occupant and those of the plants at one and the same time?

The idea of the unhealthiness of plants in living and sleeping rooms has been suggested by our chemical friends demonstrating the influence of vegetation on the atmosphere, and the reciprocal action ever going on between the vegetable and the animal world. They tell us truly that animals are continually taking oxygen gas from the atmosphere, and throwing, by exhaling, carbonic acid gas into it, and that from this and other causes, but for living vegetation, the air would become impure and unfit for breathing. The solid part of plants being chiefly carbon—of which charcoal may stand as a familiar type—and every green part of a plant having the power to absorb this carbonic acid gas in the atmosphere during light, its quantity is thus lessened, while the action of the sunbeam enables the plant to decompose the carbonic acid thus received, to retain, add, or assimilate the solid matter, the carbon to itself, and to set the other constituent (oxygen) free for the benefit of the animal world.

Thus it would seem that the nearer we get to healthy vegetation the more likely we shall be to get the benefit of this fresh-forming oxygen; but, as if to damp our enthusiasm, we are presented with a lesser and a greater drawback to our satisfaction. This lesser is, that all unhealthy parts of a plant, yellow leaves, &c., and, what is more painful still, all *flowers* in proportion as their colour recedes from the green, vitiate the atmosphere rather than improve it even during the day. The second drawback is, that at night, or in darkness or much shade, even healthy plants exhale carbonic acid gas and inhale oxygen, and just in proportion to their size and powers deteriorate the atmosphere like ourselves, and therefore become, especially after twilight, very undesirable neighbours in our dwelling and sleeping rooms. To this heavy accusation I reply that, in general, the size of flowers, in proportion to green leaves in plants grown in rooms, is so small that during the day the advantage greatly outweighs the disadvantage; and though undoubtedly plants do give off carbonic acid gas at night, yet at that time the rooms are generally at their coolest, and as this gas is something like three to two heavier than common air, it will, in such circumstances, fall to the floor, and only be mingled with the general atmosphere by the heat and the sunshine of the following day. Unless the plants were extra numerous the absorption of oxygen would not much influence the air of the apartment. All or almost all injury might be avoided by seeing that the plants were lower than the seat or couch of the owner. I believe this the more because *dew*, the condensed moisture in the air near the ground, holds much more of this gas in solution in general than common water does.

On the whole, then, unless in the case of delicate invalids, or of plants with very large flowers or having a powerful odour, I believe that healthy plants in rooms are decidedly beneficial, and promotive alike of cheerfulness and health, and that this is

especially the case in large cities and towns. Were it not that our atmosphere is continually changing, the air in cities would soon become unwholesome from the breathing of animals, the combustion of fuel, and the putrefaction of organic matter. In winter we get supplied with oxygen wafted to us from the luxuriant vegetation of the tropics. In summer our towns have a purer atmosphere because of the breezes that pass over green woods and corn-fields. Even then, however, a fine day in the crowded city, and a fine day in the shady wood or by the purling brook, are found to be different things. In the one case we soon lose the elasticity and buoyancy which seems to grow upon us even when we are somewhat physically fatigued in the other. As most questions have two sides it is but right to add that the streets of the large city are the preferable places for those who prefer to roam abroad at night rather than the day. The absence of vegetation exposes the loiterer to little chance of breathing an extra quantity of carbonic acid as it falls. I have been assured again and again, by those who have tried both, that walking London streets during late hours never did them any harm, though similar exercise in a woodland district in summer was always attended with unpleasantness and debility. But we have no wish to minister to any encouragement of midnight prowling or exercise out of doors. We would wish that our sisters and brethren living pent up in cities should realise some of the cheerfulness we derive in a summer day in the open country, and I believe that they can do much individually and unitedly to secure it. Individually they can have healthy plants in their windows, and feel the exhilarating effects of looking over them as the sunbeams play among their foliage. Collectively they can unite their voices and their efforts, so that in all new communities of citizens and old towns of large extent, as opportunities offer, large zones, and squares, and parks should be sacredly set aside, not merely for the recreation of the people, but as grand vegetation manufactories, in which oxygenated air shall be elaborated for securing the health and promoting the cheerfulness of the inhabitants.

R. FISH.

(To be continued.)

CHEMICAL SOCIETY.—Jan 19.—Dr. W. A. Miller, President, in the chair.—A paper was read, by Mr. Lawes and Dr. Gilbert, "On the Composition of Wheat, Flour, and Bread." The authors described the results of an extended course of experiments, in which the wheat was traced throughout from the field to the bakery. The crops under examination were grown each successive year from 1845 to 1854 inclusive. In 1846, which year yielded altogether the most fully matured crops, the proportion of nitrogen was lowest, and in 1853 when the crops were altogether poorest, the proportion of nitrogen was highest. The characters of a highly-matured crop are low proportion of water, low proportion of ash, and low proportion of nitrogen. In reference to the effect of manuring, it appeared that in crops manured with both nitrogenised and mineral matters, there was the best produce and the greatest reduction in the proportion of nitrogen. The character of the ash of wheat, though subject to considerable variations in poor crops, was found in well-matured produce to have great fixity of composition. The character of the ash, moreover, was very independent of the nature of the manure, but it was observed that the proportion of lime increased with the maturation of the crop. In reference to the products of high the mill, the bran was found to yield 10 times as much ash, and $1\frac{1}{2}$ times as much nitrogen as did the household flour. The authors estimated the amount of water in bread at from 36 to 38 per cent., and considered that 100lb. of flour yielded on the average 138lb. of bread. Their experiments showed that the loss of dry matter in fermentation is extremely small, certainly less than 1 per cent. They considered that the average amount of nitrogen in bread was 1.3 per cent. It is well known that millers and bakers consider the excellence of flour to be in proportion to the amount of starch. Contrary to the opinion of Liebig, and of most chemical physiologists, the authors maintained that the bakers' standard is the correct one; or at any rate that the least nitrogenised bread contains an ample sufficiency of nitrogen, and that the great demand for food is

for its respiratory or carboniferous constituents. From a large number of analyses of flour, in which the gluten was separated mechanically, it appeared that, both in Europe and America, in proceeding from the north to the south, the proportion of gluten gradually increased, and, consequently, according to the authors' criterion of high maturation, the most matured crops were grown in the coldest latitudes.—Dr. Marcet was indisposed to admit the authors' conclusions in reference to the low value of the nitrogenised constituents, and referred to some experiments showing, that the more highly nitrogenised is the character of the food, the less is the quantity of food required.—*Athenæum*.

BOTANY OF NORFOLK ISLAND.

By T. W. SHEPHERD.

THAT which makes the Norfolk Island flora so interesting to the botanist is its singularly distinct character. No other island, perhaps, in the world, of equally limited dimensions, can boast of anything like the number of species of plants which belong exclusively and normally to its flora. It is true that other small islands may possess some small plants peculiar to themselves, but in all other cases that I am aware of, the majority of the plants may be found either on some main land, or on other islands, situated in similar latitudes. Such, for instance, is the case with the great assemblage of islands lying along the torrid zone between 'Torres' Straits, New Guinea, and the west coast of America. Amongst these it is found that islands as far apart as 1,000 miles resemble one another in their leading botanical features. It is also true that many of the islands which I have alluded to still remain unexplored as regards their botanical productions, and when that has been done some of them may present the same distinctiveness of character that I now claim for the field on which I am discoursing. I do not, however, anticipate that any such will be found, that is, of so limited an extent. The whole island contains little more than eighteen square miles of surface, or what in this colony would be considered as a rather moderate-sized estate; and yet this small spot contains more species peculiar to itself than perhaps any other island of twenty times its extent.

Although so contiguous to New South Wales and New Zealand, and having Lord Howe's Island about midway between the former and itself as a connecting link, yet, if we exclude *Phormium tenax* (the New Zealand Flax) and several species of Ferns, very few indeed of the plants essentially belonging to either of these places are to be met with at Norfolk Island. As I have said before, it is this distinctiveness of the flora we are speaking of that makes it so interesting to the botanist, who, if it were possible to carry him unconsciously from the heart of London, and place him in the midst of a Norfolk Island scrub, in the course of a single night, he would, upon awaking and surveying the vegetation around, immediately recognise the place to which he had been so rapidly transported.

In speaking of the trees and other plants of Norfolk Island I shall, on the present occasion, only notice some of the most prominent, and will commence with the Pine, as being at once the most striking, the most generally known of any of its compatriots, and, as well as the tallest, the most important to the inhabitants in an economical point of view.

Lieutenant Philip Gidley King (afterwards Governor of this colony), who, under instructions from Governor Phillip, formed the first settlement at Norfolk Island, described it as "one entire wood; or rather, as a garden overrun with the noblest Pines, in straightness, size, and magnitude far superior to any he had ever seen." And certainly, so far as regards the elegance and symmetry of this Pine, his description will hold good, for in these respects it is completely unsurpassed. But in magnitude it is far behind many of the same natural order found in other parts of the world, although, indeed, these may have been unknown to Lieut. King.

The Norfolk Island Pine, now known to botanists as *Eutassa excelsa*, and also under each of the following generic names, *Araucaria*, *Dombeya*, and *Altingia*, has been for some

years past one of the most popular ornamental trees in all parts of the world where known, and where the climate has been found suitable to its growth. Most of the English conservatories are furnished with one or more, in height varying from six to fifteen feet, growing in large pots or tubs. These in summer are sometimes removed to shrubberies and lawns, and there, until winter approaches, when they must be returned to more congenial quarters, or perish from the effects of frost, they form one of the most interesting features. The Chilians and Peruvians are exceedingly pleased to have at least one of these trees near the doors of their houses: they appear to hold them in some veneration, having, as they imagine, a striking resemblance to the cross.

In the environs of our own Sydney the same Pine appears to be a great favourite, for there there is scarcely a cottage garden, even if only a few yards in extent, in which any tree at all is planted, where this will not in all probability, be the one. Our readers are all doubtless well enough acquainted with the Norfolk Island Pine to know it, at all events, by sight. A particularly fine specimen growing in our Botanic Gardens is the first, as well as it is the noblest and most elegant object, which attracts the attention and demands the admiration of strangers who visit that establishment, and I presume that there is not one of us who cannot recognise the specimen alluded to; and I would here remark that in their native island such elegant specimens as this, and others that could be named, are rarely met with. This arises from the greater facilities for freedom of growth afforded by cultivation under the management of gardeners, for Nature usually places two or more trees where there is only enough room for one to develope itself fully. On approaching Norfolk Island the voyager is at once struck with the idea of a Pine island, for at first sight nothing but Pines can be seen. This feature arises from the great height to which the Pine grows in comparison with its arborial neighbours, being two or three times higher at the least, and consequently visible at a much greater distance. On a closer inspection this appearance wears off, and when the jungle is once entered it is no easy matter to find them; for you can only search for the trunk, the denseness of the scrub preventing the seeker from seeing aloft. The largest trunks that I saw were near the summit of Mount Pitt, which forms the highest point, and is about the centre of the island, and measured from thirty to forty feet in circumference. The height of these could not be satisfactorily ascertained; for, at an elevation of from 120 to 200 feet from the earth, the tops had gone, reminding one forcibly of a passage from Horace, as rendered by one of our poets:—

“The tallest pine feels most the power
Of wintry blasts; the loftiest tower
Comes heaviest to the ground;
The bolts that spare the mountain's side,
His cloud-capp'd eminence divide,
And spread the ruin round.”

Some of these topless trees must have been from 250 to 300 feet high had they not met with some violent hurricane, which had snapped them across a little above the level of the surrounding scrub, and probably at little more than half their original height. A very remarkable feature in the Norfolk Island Pine is the singularly inconstant position in which the whorls or rows of branches are placed, some trees at twenty-five years of age having less than half the number of whorls that are to be found upon others of similar age, although of the like stature. This curious circumstance I cannot account for, but the fact is of frequent occurrence, and causes such a difference in appearance that the observer is at first inclined to doubt whether they are of the same species. Many instances of this irregularity are to be met with in specimens growing in the gardens about Sydney. The most remarkable that I have met with may be seen in Mr. Josephson's garden at Newtown. This tree, with a number of others, was planted by that gentleman upwards of twenty years back, and although it keeps place in stature with the others, yet it has never formed more than one whorl in two years, while its neighbours produce one, and sometimes two, in a year. The consequence is that the whorls of branches in this tree are separated from each other to twice, thrice, or even, in some cases, four times the distance that they are in the others.

It is rather curious that this Pine has been placed in the

Linnæan class *Dioecia*, while in fact it should have been placed in *Monœcia*. This mistake occurs in our standard catalogues, and I do not know that the error has ever before been pointed out.

The uses to which the timber has usually been applied may be briefly summed up. They are sawn timber, in the shape of flooring boards, joists, rafters, battens; in fact, everything connected with the woodwork of houses, including shingles for roofing, and it is the only wood on the island fitted for these purposes. It is also the principal timber used for furniture, fencing, boat building, spars for shipping, &c., but not of the best quality for the last; in fact, without this Pine, Norfolk Island might be said to be destitute of timber fit for any useful purposes. There are, indeed, some other woods used for ornamental and a few useful purposes, but these are of little importance compared with this, the only species of the Pine family found on the island.

I have dwelt so long upon this *Eutassa* that I must defer until another opportunity what more I have to say about the botany of Norfolk Island.

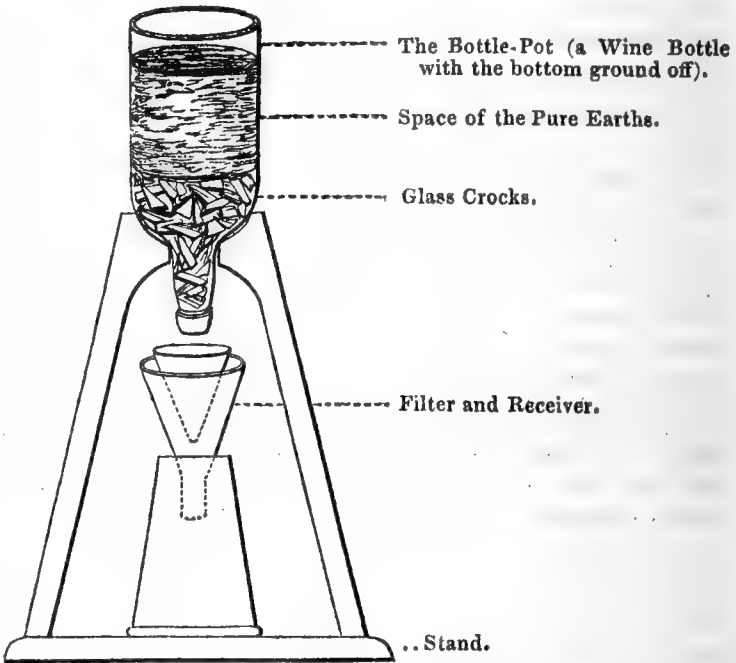
EXPERIMENTS ON THE GROWTH OF PLANTS IN THE PURE EARTHS, AND ALSO WITH STIMULANTS AND MANURE, MADE IN THE YEARS 1843—44.

By W. H. PEPYS, F.R.S., F.H.S.

THE Earths employed were	{	Silex.....	75	{	White Sand.
		Alumine	15		Pipe-clay.
		Carbonate of Lime .	10		Whitening.

100

The pots in which the experiments were made were green wine-bottles, cutting off their bottoms and reversing them on a stand for that purpose.



April 26th, 1843. — The first experiment consisted in mixing the earths in the proportions described, and having placed some broken green glass as crocks in the glass pots, they were nearly filled with the mixed earths. Three yellow Lupine seeds, each weighing two grains six-tenths, were then planted about half an inch deep therein, and watered with three ounces five drachms of distilled water, and exposed to the atmosphere. They were watered every day until the 29th of May, with from half an ounce to an ounce of distilled water; and on that day one of the seeds broke ground, only the cotyledon making its appearance; the watering was continued, and on the 5th of June a small plume appeared, but very weak, which increased but very slowly. On the 10th of July the plant had six leaf-stalks, of six leaves each; and on the 1st of August, the plant being

very weak, with eleven leaf-stalks, and no sign of bloom, it was removed from the vessel, and weighed forty-two grains five-tenths. From the plan of the glass pot it will be seen that the distilled water, after its passage through the pot, could be examined as to any alteration in its quality. It was so tested, and with

Litmus	No reaction.
Brazil Wood.....	None.
Prussiate of Potash	None.
Muriate of Baryte	None.
Nitrate of Silver	Very slight.

In one of the same glass pots filled with peat and loam three Lupine seeds of the same weight were planted and watered with cistern-water each day, and on the twentieth day from planting broke ground; only one was suffered to grow, which was strong and healthy, and on the fortieth day from its breaking ground had twelve leaf-stalks, with six to seven leaves each. Twenty days after it showed for flower, and being taken up weighed 192 grains five-tenths.

April 28th, 1843.—Planted three Lupine seeds, two grains weight each, in the pure earths; watered them with a solution of guano (one ounce to twenty ounces of water); continued the watering to the 14th of June without any appearance of the plants, examined the earths and found the shells of the Lupine seeds, the whole of the pulp in the interior having disappeared.

June 30th, 1843.—Planted twenty Mustard seeds in the pure earths, watered them with distilled water, and on the 5th of July two of the seeds broke ground very weakly; continued the watering, and on the 7th two more appeared; continued the process until they gradually decayed, which took place in a few days.

October 5th, 1843.—Planted three Lupines in the pure earths as before described, watered them with a solution of sub-carbonate of ammonia (half an ounce to one quart of water); continued the watering with the same solution for thirty days without any appearance of the plants, examined the earths, and found the Lupine shells.

October 5th, 1843.—Planted three Lupines in the pure earths, watered them with a solution of muriate of ammonia (half an ounce to one quart of water); the plants not appearing after thirty days, examined the earths, and found the shells of the Lupine seed.

April, 1844.—Planted three Lupines, two grains each, in the pure earths, in which thirty grains of guano had been well mixed, watered them, and continued to do so every other day, and on the fourteenth day one Lupine broke ground, and on the sixteenth day the other two appeared; continued the supply of water when required, and on the 11th of June, as some of the leaves were faded, gave twenty grains more of guano as a top dressing; in the course of three or four days it was evident that the top dressing had improved the leaves, except the faded ones, which never regained their colour; continued the regular watering, and on the 15th of July they began to show for flower; on the 25th they were removed from their glass pots, and the roots shaken out from the adhering earth. The three plants weighed together 200 grains.

A, 103	} 200
B, 49	
C, 48	

April, 1844.—Planted three yellow Lupines (two grains weight each) in the pure earths, in which thirty grains of Daniell's Manure had been well mixed, watered them, and continued so to do every other day. On the 19th of April one broke ground; kept up the supply of water, and on the 10th of June gave a top dressing of twenty grains more of Daniell's Manure, as the plant had always been of a stunted growth. On the 21st of July, as it had not improved, it was taken up; it weighed fourteen grains.

April, 1844.—Planted three Lupines, two grains each, in the pure earths, well mixed with thirty grains of soot; watered them, continuing the supply until the 14th of April, when the whole three broke ground and grew well. On the 10th of June gave twenty grains more soot as a top dressing; though the soot remained, without apparently mixing with the earths, yet the plants improved by this treatment, and on the 25th of July showed for flower.

Upon removing them and shaking out the earth from the roots, the three weighed 215 grains.

A, 98	} 215
B, 60	
C, 57	

April, 1844.—Planted three Lupines, two grains weight each, in the pure earths, well mixed with thirty grains of nitrate of potash; watered, and the supply kept up until the 10th of June; no appearance of a plant; the earths then examined, and the shell or covering of the seeds found empty.

The same experiment as the last, only thirty grains of nitrate of ammonia mixed with the earths, the same result followed. The shells or covers of the seed left weighed one grain five-tenths.—(*Horticultural Society's Journal.*)

LIMNANTHES ROSEA.



RAISED from seeds brought home by Mr. Hartweg in 1848, and said to be found in swampy places in the Sacramento Valley, California.

A prostrate succulent plant, with all the habit of *Limnanthes Douglasii*. The leaves are extremely narrow, and sometimes have no side lobes; in other cases they are pinnate or even somewhat bipinnate. The flowers are a pale dirty rose colour, and stand on stalks much longer than the leaves. Each petal has its base bordered with long hairs.

It is a hardy annual, and requires the same treatment as *Collinsias* and *Nemophila insignis*. If sown in the autumn, it flowers in May; if sown in the spring, it flowers during the summer.

It is tolerably pretty, but of less interest than *L. Douglasii*.

The collector who found it called it *L. pulchella*, a name which is only calculated to mislead.—(*Horticultural Society's Journal*.)

COLLATERAL HIVES.

THE peculiarities which distinguish the collateral boxes I use from those of Nutt and others I have either seen or heard of being in use, lie first in the mode of communication between the stock box and side room, and, secondly, in the construction of that room itself; and I think I may be allowed to characterise the modification of the system as an improvement, when the advantages to be derived therefrom, and mentioned hereafter, are taken into consideration.

I shall endeavour to be as concise as possible in the following description, at the same time studying to render that description sufficiently clear for the guidance of any person so disposed possessed of a few tools, a little leisure, and a moderate modicum of constructive talent, to make them for himself as I do.

The stock box is made of one-inch stuff throughout, eleven inches and three-eighths square inside measurement, eight inches deep including the bars, which are seven in number, one inch and an eighth wide and half an inch thick; these bars are moveable, and rest in recesses cut to receive them in the inside edge of the box back and front. The four centre spaces between the bars are three-eighths of an inch, the other four spaces half an inch. A window seven inches long and five deep is placed at the front, another at the back. The glass must be as flush as possible with the inside of the box. Wooden blocks or zinc slides are used for shutters.

The crown board is also of one-inch stuff, clamped at the ends, and projecting over the stock box half an inch on every side, except the one which communicates with the side compartment. On its underneath side two grooves are cut two inches and a half wide, three-eighths of an inch deep. One groove is situated at the front, the other at the back. Each groove commences parallel with the inside of the box at one end, and runs right through at the other. The outside edge of each is in a line with the inside of the box back and front. They are thus eleven inches and seven-eighths in length.

The crown board for the side accommodation is made in all respects the same, care being taken that the outlets of the several grooves in each correspond with and fit each other accurately, as they are the galleries of communication—the upper thoroughfares from the one to the other. The dividers are of zinc, two inches and a half long, one inch and a half deep. One half of their depth is perforated, the other plain. When the family is reduced to the stock box, the insertion of the perforated half of the divider affords ample ventilation. A three-inch hole in the centre of each board, provided with either a wooden block or perforated zinc plate (both will be found useful), completes them. The side accommodation consists of two shallow boxes, each eleven inches and three-eighths square inside measure, four inches deep; both are supplied with bars as directed for the stock. In this case, however, they are only one quarter of an inch thick: the bottom one has no crown board. Two windows are cut in each box, seven inches by two inches and a half. These boxes are held together by means of hooks and eyes, and are fastened by the same means to the stock.

The floor board is in one piece, clamped at the ends, larger than the boxes every way by about three quarters of an inch. This projection is bevelled down. The entrance to the stock box is cut out of this board, five inches long, three-eighths of an inch deep, sloping upwards and inwards. This entrance is placed towards the extremity of the board on one side, while the entrance to the side box is placed towards the extremity on the other side; so that when additional room is to be given the whole is turned completely round, and the new entrance is brought to where the old one was.

While the upper intercourse between the stock and side compartments is maintained by means of the grooves in the crown board, the lower is accomplished by means of two covered passages or calverts, cut out within the thickness of the floor board. These are each two inches and a half

long, and, where covered three-eighths of an inch deep, terminating right and left by inclined planes. The bridge or covering is two inches wide. One of these passages is situated towards the front, the other towards the back. A narrow vertical opening is made both back and front for the reception of perforated dividers, and a piece of wood three inches wide, and as long as the floor board is wide, is screwed underneath to stay and strengthen the whole, at the same time serving as a floor for the bottom edge of the dividers to rest upon.

These are the dimensions I find to be the most suitable for this locality, which may be ranked, with a little exaggeration, amongst the second class. In more highly-favoured spots, both in this northern region and in "sunny England," where "milk and honey" overflow, larger ones may be used. This increase of size is best given by enlarging the square of them so as to admit another bar, especially if it should be their fortune to be subjected to distant transportations, in order that their inmates may be made rich and joyous with the luscious nectar of the blooming Heath. I have often removed my boxes of the above depth for this purpose between thirty or forty miles, and never found the combs to fall; whereas it would be dangerous to attempt it with boxes deeper, unless encumbered with cross sticks, which would effectually do away with the usefulness of the moveable bars. The foregoing description of my boxes is made under the supposition that they will be placed in a bee house or shed, as I fancy few who can afford the extra cost of wooden hives will grudge a few pounds for an erection to place them in. Should a bee house, however, not be used, there are a few things necessary which have not been mentioned; indeed, it is scarcely needful to do so, as they will readily suggest themselves, such as alighting boards, stands, and covers.

Two desiderata sought for, and, as a rule, I may say obtained, by this form of the boxes are, first, a more early deprivation, by means of the side room being in two compartments, than can be accomplished when it is one and undivided; and secondly, the almost certainty there is of obtaining their contents pure and unmixed with brood.

I have not said anything about affixing guide combs to each alternate bar, as the importance of so doing, the kind of comb used, and the *modus operandi* by which they are attached, are so generally known, that to do so now would be a work of supererogation, tending to nothing than a farther inroad upon your space, which, I doubt, I have too much encroached upon already.—D. G. M'LELLAN, *Rutherglen*.

A GOOD POTTING-BENCH PRACTICE.

THIS is a quick and pleasant way of shifting a plant without disturbing tender roots, and endangering a loosely-held-together ball. I have used it for years, and in some cases it is invaluable.

Place the new pot before you; crock it, drain it, moss it, and bottom it with soil as in the usual way. Now take the plant in its old pot, and place it bodily on the bottoming of the new pot; fill up the space between the inner side of the new pot and the outer side of the old one, using the potting stick or your fingers, as the case may require. Now take out the old plant, pot and all, and you will have a beautiful mould or matrix, a little larger or smaller than the ball of your plant, according to the depth in which you potted the old pot in the new one. Now turn out the ball, pop it into the hole, press it down, and the thing is done. If the rim of the old pot is kept a trifle higher than the rim of the new, the ball will generally fit. This part will depend on the operator; I can only describe the operation.—A PRACTICAL FRIEND.

NEW INVENTIONS.

THOSE who read my stories from Shrubland Park may recollect my saying that Mr. Wells, the foreman on the pleasure ground, was the most honest man in all Suffolk. He was also a natural genius; he contrived many useful schemes for me to reduce labour, and he was "always up to something." The following extracts from a letter I had

from him this morning will show that we must have a leaf out of his book all the way up from Suffolk; but I am not sure that I ought to publish to the world what he might only have intended for my eye; however, we must settle all that:—"You will wonder what I have been doing," he says, "since I last wrote to you. You always accused me of being itching after something fresh, and so it has been with me ever since. I have been doing a great deal, which, perhaps, you will not think much of when I tell you. First, about my forcing with flues. I have now a flue which heats a Cucumber pit eighteen feet long, and then goes through a Melon pit of the same length; after that it heats a range of pits, forty feet long, for preserving plants, and it answers very well. The Cucumber and Melon pits are large enough to walk in, and I have Cucumber plants now (17th of February) large enough to train on the trellis: I could give you the outline of their management if you require it. The next thing worth your notice is for removing plants, as trees and shrubs, which I think is very good. I have a purchase (lever) which will lift a ball of earth a ton weight with two men. The ball can be packed without disturbing the roots, whether the plant be in sand or clay. Some Portugal Laurels I thus removed were fifteen feet high, and fifteen yards round them, and they never lost a leaf. They are growing better than before. The third is a pump of my own make for liquid manure; a simple pump, but will pump twenty-four gallons per minute. It can be moved from tank to tank, of which I have five, and some of them very long; and the last is a plan for taking up wall trees in winter to clean the walls; letting the trees stand till they are in flower; then putting them to the wall again (*hear, hear*), which keeps them clean all the next summer."—THOMAS WELLS, *Tattingstone Rectory*.

I need hardly say how valuable would be a full and particular account of all these things, from the flue to the wall trees.—D. BEATON.

CULTURE OF THE CITROUILLE.

IN the middle of April make a hole in the ground, and fill it with three or four spadeful of manure. Replace the soil, and sow the seed *sideways* about two inches deep. Protect the young plants from frost by covering them with a mat or bell-glass. Water in dry weather. Of course it can be sown earlier on a hotbed under glass, and afterwards hardened gradually before planting out. The habit of the plant is to send out roots under almost every leaf, which secures the shoots in the way they are trained, and prevents their being blown about in exposed situations. This superb fruit is ripe in September, and keeps good all the winter. It may be eaten like Turnips, and is superior to Carrots for thickening and enriching soup. The pulp well drained, and flavoured with lemon juice, makes excellent tarts, pies, &c. The young shoots are equal to the best Asparagus, and the roasted seeds are a nice addition to the dessert.

[This has been sent to us by an anonymous correspondent, and there is nothing new in the directions for cultivation; but we insert the communication for the purpose of again recommending to our readers the culture of the Pumpkin. Some varieties are far more palatable than others. The French sometimes call the common Pumpkin *Citrouille*.]

QUERIES AND ANSWERS.

PTERIS TREMULA.—GENTIANA CILIATA.

"'CAROLINE' would be greatly obliged if in some future number of THE COTTAGE GARDENER she could be informed what is the name of the inclosed Fern. It grows as large as the *Pteris aquilina*, and remains green during the winter, making a beautiful object if placed in the centre of one of the large modern windows, and requires very little attention.

"Could she also be told where to obtain the lovely little *Gentiana Bavarica*, which grows wild on the mountains in

Switzerland, and would, she thinks, form a great ornament to a small garden?"

[Your Fern is *Pteris tremula*, a native of New Holland. What you call *Gentiana Bavarica* is now known as *G. ciliata*, and has been named by some botanists as *G. serrata*. It might be met with in the florists' collections about London.]

VARIEGATED GERANIUMS FOR BEDDING.

"Can you inform 'H. C. K.' as to the merits of the Variegated Geranium *Alma* for bedding purposes? Has it as good a white in the leaf as *Mountain of Light*, and a better truss?"

[We have not yet quite convinced ourselves which is the best Variegated Scarlet Geranium. The palm is claimed both by the *Countess of Warwick* (Kingham's), and Turner's *Alma*. Of this we are quite satisfied; but those who admire the Nosegay style will prefer Jackson's *Variegated Nosegay* for a bedder, as it grows quite as freely as *Fothergillii*, the original Nosegay, and is, therefore, the best grower of all the Variegated Geraniums. *Alma* is the best scarlet flower, and *Countess of Warwick* has the best truss.]

TUBEROSE CULTURE.

"I have had a few bulbs of the Double *Tuberose* sent me. Will you kindly, through your valuable journal, give me their treatment, as I have referred to your past numbers for some two or three years, and cannot find anything respecting them? I have a small greenhouse, and to-morrow my gardener makes the first Cucumber bed, so that I have both these appliances within my reach."—AN AMATEUR.

[The nearest idea we can give of the culture of the Double Tuberose, without repeating our former treatises on it, is this:—Pot the bulbs early in March in No. 48 pots, or in a pot in sandy loam with a little leaf mould, but not so much as is meant by a rich compost. As the bulbs do not flower a second time with us, all that is wanted is a "holding soil," that is, to be loamy, so as to hold water well, and to be strong enough to carry out one bloom without stimulating the leaves too freely; then the very same kind of treatment in every particular as one would give to a Hyacinth in a pot. Hyacinths will stand enormous heat for early forcing, and so will the Tuberose. Hyacinths will "come" without a particle of artificial heat, and so will a Tuberose; but it is better to encourage it a little in a close pit till the flower is half grown, or above a foot long; after that the summer heat in a greenhouse is enough for it. We have seen very strong bulbs strongly forced so as to be in bloom by the latter part of June, and when on the point of flowering hardened off, and planted out in flower-beds, where they looked grand with the old scarlet Lobelias.]

IN WHAT MONTHS ARE YOUNG BEES HATCHED?

"I have many works on bees—Nutt, Wood, Payne, Lardner, and though last, not least, 'Bee-Keeping for the Many'—and yet I have not been able to ascertain in what particular month the young bees are formed. Will you be good enough to say when? I fancy the young progeny are now shortly about to make their appearance, and this I judge to be the case from the degree of heat in my hive. On the 30th of January last the thermometer marked 71°. Is not this at such a season unusually high? Since that the quicksilver has been often 60°; to-day, with a cold, easterly wind, it is 52°. Does not this degree of warmth betoken a healthy state of affairs in the internal department of the hive?"—RUSTICUS EXPECTATUS.

[In Mr. Taylor's "Bee-Keeper's Manual," fifth edition, the subject of your inquiry is fully discussed. No doubt your stock is in a strong, healthy state, as shown by the temperature; but care is still necessary, for cold winds may yet be expected, and a hive which in February has shown every sign of strength has often been known to fail later in the season. Attention to warmth and sufficient food are essentials at this critical period.]

CONSTRUCTING A FERNERY.—EMIGRATING TO CANADA.

"A correspondent, writing in your number for February 10th on the construction of a Fernery, says, 'I would prefer a span-roofed house, with a side facing the twelve o'clock sun, and a path up the centre, with rockwork on each side;' and then he goes on to say, 'I do not believe in a north aspect for Ferns.' I cannot understand how he intends putting up his rockwork to avoid having one side facing the north, as the path would certainly run east and west. Now, had he said *one end* to face the noonday sun, both sides of the rockwork would obtain an equal share of sunshine.

"I would recommend a quantity of soil, consisting of peat and loam, with a liberal addition of sand, broken pots, lime rubbish, &c., to be thrown among the stones as the building progresses. The Ferns would then stand a long time without removing, which they would not do if all the soil they had was in the 'nests' in the crevices of the stones. I once saw a lean-to house built up in this manner, and planted with a choice collection of Ferns, and I have never seen a house I so much admired.

"I am a young gardener, and feel desirous of emigrating to Canada; but I am, like a great many more of my brethren, not over-burdened with pecuniary means. Would you kindly inform me in your answers to correspondents under the name of 'Tom,' if Government are sending out emigrants to that colony, and if a young gardener would be likely to get a free passage from it? If not, could you advise me as to the best way of obtaining a situation there before leaving England?

"I have had a fair education, and have been seven years at the business, the last three at one of the largest establishments in Wales."—A CHESHIRE-MAN.

[Buy the *Canadian News*. It is published in London once a fortnight. It will give you all the information you require. If you want our advice afterwards write to us again.]

TO CORRESPONDENTS.

FLOWER-GARDEN PLAN (Amateur).—The true way to plant such a figure is to have 1 and 5 scarlet, and 3 and 7 yellow, and 2, 4, 8, 9, white; but the design is all but unfit for any flowers except pyramidal plants, and where are they to come from? About one-third of each bed will be lost, owing to the long, sharp points. Without a single exception this is the worst plan for a group of beds we have ever seen. *Tom Thumbs* for scarlets, and *Calceolaria rugosa*, or any of the *rugosa* breed, for yellows. Petunias are inadmissible, and so are Verbenas, as the flowering parts must be cut to suit the points of the beds. If the plan was ours we would edge the four large beds all round with *Calceolarias*, and put two kinds of Geraniums in two opposite beds, and two kinds of Petunias in the other two. The centres of the small beds might then be of variegated Geraniums, with blue edgings of Lobelias; two kinds of variegated Geraniums, and two kinds of blue Lobelia.

WALTONIAN CASE (A New Subscriber).—You will find a drawing and description of it in our No. 389. They can be had of Mr. West, ironmonger, Kingston-on-Thames. Any good bricklayer could build an Arnott's stove such as is described in Mr. Rivers' "Orchard House."

MORTAR MADE FROM SEA SAND (A Subscriber).—It would be useless to pick out the mortar and re-mix it with more lime. If the wall were ours we should have the mortar picked out, and the joints pointed with Portland cement. We should so do because we always train upon trellises, and do not drive nails into a wall. If you wish to nail to the wall use fresh mortar altogether, mixed with sand not saline.

CAGE BIRDS (Sara).—We shall be obliged by any one sending the results of his own practice in feeding young Blackbirds, Linnets, and other song birds. In the mean time "The Bird-Keeper's Guide," published by Dean and Co., London, a very cheap little book, may give you some hints.

TAYLOR'S HIVES.—Our *Rameltore* correspondent, in reference to Taylor's Hives, will do well to consult the author himself, in the "Bee-Keeper's Manual," where a full description is to be seen, with illustrations, &c.

EGGS OF BIRDS (J. D. and others).—"T. A. S." has the work by Jennings to which you refer.

THE POULTRY CHRONICLE.

MR. HEWITT AND HIS CALUMNIATORS.

On the 28th of January Mr. Oakey, of Preston, wrote to Mr. Hewitt, of Eden Cottage, Sparkbrook, near Birmingham, informing him that Mr. Worrall, one of the Secretaries of the Liverpool Poultry Show, had written to the Committee

of the Preston Poultry Show, informing them that Mr. Hewitt, who had officiated as one of their Judges on the 21st, was in partnership with one of the exhibitors at Preston, to whom Mr. Hewitt had awarded prizes. This led to the correspondence from which we shall proceed to give extracts.

MR. HEWITT TO W. C. WORRALL, ESQ., 6, LOWER CASTLE STREET, LIVERPOOL.

"Eden Cottage, Sparkbrook, near Birmingham,
February 11th, 1857.

"DEAR SIR,—Although my present bodily and mental inquietude and affliction* would strongly suggest the wiser policy to be silent, a report has, from friends, twice reached my ears that strictly prohibits such a course.

"I am told you have written to the Preston Committee, stating, in effect, that 'I hold partnership with some exhibitor or other, and that I have purposely given awards to my own individual interest in consequence.'

"I can, I admit, scarcely accredit you would be guilty of such cruel or cowardly injustice, but feel it a bounden duty to respectfully ask you either at once to deny such statement, give up your authority by naming all parties, or substantiate it.

"Waiting your reply."

MR. WORRALL'S REPLY.

"6, Lower Castle Street, February 12th, 1857.

"SIR,—Regretting your severe affliction, I have to reply to yours of yesterday.

"Mrs. Sharp, of Bradford, openly accused you at the Prescott Poultry Show, in the hearing of one of my brothers and many friends, of partnership with Mr. Chune, of Coalbrookdale, and my information was to the effect that you did not contradict her statement.

"That I may free myself from the imputation of 'cruel or cowardly injustice,' you will oblige me by making *The Field* or *THE COTTAGE GARDENER* the medium of farther communication with me.

"I am, &c."

MR. HEWITT THEN WROTE TO MRS. SHARP AS FOLLOWS:—

"Eden Cottage, February 13th, 1857.

"MADAM,—To my utter astonishment I find that Mr. W. C. Worrall, of Liverpool, has been circulating a report to my extreme prejudice as a Poultry Judge, both verbally and by letter to the Preston Committee, that I am in 'partnership,' as to poultry matters, with Mr. Josiah B. Chune, of Coalbrookdale, a statement than which nothing could be more truly unfounded, and gives up your name as his 'authority' for saying so. The correspondence I shall inclose you, and shall also write to Mr. Chune by this day's post, stating the same to him.

"Of course, as I never myself heard or knew of such an assertion until I had refused 'not' to judge the Preston Poultry Show, I merely ask you by return of post to state whether you ever did on any occasion make the mis-statement referred to, as your reply will, of course, guide future proceedings, whatever they may be, being determined in any case farther, and the closest investigation shall ensue.

"I am, indeed, sorry to ask this favour of a lady, more especially, too, as it comes at a moment when I have myself just lost an only sister by sudden death, without even a word, a struggle, or a groan, leaving me with a mother totally helpless and bed-ridden for two long years and more; but positive duty to my own character and that of others compels me to adopt measures for which I have no other alternative.

"I am, &c."

"To Mrs. Sharp, 47, Mill Lane, Bradford, Yorkshire."

MRS. SHARP'S REPLY TO MR. E. HEWITT.

"Bradford, February 14th, 1857.

"SIR,—I received yours of the 13th, and am exceedingly sorry to hear of your bereavement, and more so to know of the annoyance of which you have just reason to complain, as no one knows better than yourself what I said to you at Prescott; and I have said nothing behind your back that I have not said to your face. I never made the assertion that

* Alluding to the sudden death of his sister and dangerous state of his mother.—ED. C. G.

you were in *partnership* with any exhibitor, nor have I heard any one else say so, nor have I *heard* the most slight allusion to anything of the kind. I much regret that any unpleasantness should arise out of an amusement, and more particularly under your present circumstances.

"I remain, &c.,

"Your obedient Servant."

MR. HEWITT TO MR. J. B. CHUNE.

"Eden Cottage, February 13th, 1857.

"SIR,—In explanation of my seeming intrusion on your privacy I inclose a correspondence that will best 'tell its own tale;' and in common justice to *your* character as an exhibitor of poultry, and my *own* as that of a Poultry Judge, I simply beg to request, without any reservation whatever, a statement for publication of our relative past and likewise present positions as to poultry matters.

"I am, &c."

MR. CHUNE'S REPLY TO THE ABOVE LETTER.

"Green Bank, Coalbrookdale, Shropshire, Feb. 14th.

"SIR,—Your note came to hand this morning, the contents of which quite astound me. As I have not taken THE COTTAGE GARDENER for some time I was quite ignorant, and the note just received is the first intimation I have had of the *base accusation made against us*, that is, of being in 'partnership' with you in poultry matters. I never bought a fowl of you, never sold you one, nor have I had *any connection whatever* with your poultry-yard. I never yet *even entered your premises*, neither have I seen you a dozen times in the whole course of my poultry career. From the correspondence inclosed with your note I perceive this false and wicked charge was first 'cooked up' at Prescott, allowed to get cold, and now has been 'warmed up again' at Preston by Mr. W. C. Worrall, my 'old competitor' in Hamburgs, and almost the last man I should have thought would have supposed such a thing.

"My *same* birds won at Preston last year, when Mr. Worrall's 'friend,' as some exhibitors term him, was one of the Judges.

"A Liverpool friend of mine says, 'Mr. Worrall was sorely put about with what transpired at the London Show and at Preston. Disappointment raised his thermometer to a state of blood heat, and he seems to have fixed upon you and me as the objects of revenge.'

"So let it be—'a rotten stick soon breaks.' Mr. Worrall falls back upon Mrs. Sharp as being the instigator of this infamous report.

"I believe the poultry fancy is getting to a state of excited 'JEALOUSY.' If it does, down it goes for certain. If Mr. Worrall is not satisfied with something like a share of prizes I would advise him to have a show and award the prizes himself.

"I have, by this day's post, written to Mrs. Sharp, demanding an apology or the name of her authority for circulating such a base falsehood.

"Yours, &c."

MR. CHUNE TO MR. WORRALL.

"Green Bank, Coalbrookdale, February 15th, 1857.

"SIR,—Yesterday I received a note from Mr. Hewitt, inclosing correspondence referring to a *letter sent by you* to the *Preston Committee*, in which you state that Mr. Hewitt and myself are PARTNERS in poultry matters, which assertion is *most false and unjust*, and I now request the name of your authority for circulating such a report. I never bought a fowl of Mr. Hewitt, never sold him one, never have had *any connection whatever with his poultry-yard*, never yet even entered his premises, neither have I seen him a dozen times in my life; in fact, I know but little about Mr. Hewitt. I have met him at several Shows in this neighbourhood, and any information I required as to the merits of fowls he has always given me in a most kind and gentlemanly manner, as, I believe, he does to every one."

[Then follows a charge against Mr. Worrall not relative to the charge against Mr. Hewitt and Mr. Chune.]

"Whoever the instigator may be, I hope Mr. Hewitt will use every exertion with poultry Committees to have him excluded from all future Exhibitions, which will be the best means of putting down such a wicked, malicious person. I

will conclude by sincerely hoping Mr. Hewitt may LIVE LONG TO TRAMPLE DOWN HIS ENEMIES.

"I am, &c."

FROM MR. WORRALL TO MR. CHUNE.

"February 17th.

"SIR,—I was so much startled on opening yours of Saturday last, that I must beg you, if further communication be required, to give up 'illuminations,' or, in other words, not to underline your letter so much, as the effect is severely felt by a highly nervous system, and cannot possibly make your style and matters more impressive.

"In my letter to the Preston Committee I did not state that Mr. Hewitt and yourself were in 'partnership;' I must, therefore, hope that your mis-statement is not wilful. What I did assert (and now repeat) was, that an exhibitor at the Prescott Show openly charged Mr. Hewitt with such community of interests, and that he did not contradict the assertion; and as this charge was against Mr. H., and did not at all affect your moral position, I must refer you to him, as I have already given up my authorities for the statement. I notice all your assertions as to your slight acquaintance with Mr. Hewitt, but my opinion being confirmed by assurances received at Prescott, Wigan, Birmingham, and Preston, I regret that I cannot so readily resign it, especially as, after the Wellington Show, I was informed by a letter from a gentleman that the Golden-pencilled fowls with which you won the Cup there were bought either from Mr. H. or by him for you at 12s. each. Allow me to remark, however, that if you have subsequently exhibited them at Windsor, Prescott, Birmingham, or Preston, they are not worth the money. I could repeat to you several amusing statements which have been made about your purchases, through the advice of Mr. Hewitt, of fowls whose subsequent performances under his sole arbitration have confirmed the prudence of his selection; but I sincerely hope they are not correct.

"In conclusion, allow me to remark, that I am accustomed to more polite language, and less strong expressions than those contained in your letter; and that as to Mr. Hewitt's destruction of his enemies, there is one weapon only with which he might crush them all.

"I am, &c."

MR. CHUNE TO MR. W. C. WORRALL.

"Your note came duly to hand this morning. I am sorry that my communication did not please you, but that is not the point. However, I will not underline this letter.

"I am aware that you have given up the name of your authority for circulating the *report* mentioned in my last; but, unfortunately for you, your authority, in strong words, denies 'ever making such an assertion, ever hearing any one else do so, or ever having heard the slightest hint at anything of the kind.' You say that you were informed, 'by a letter from a gentleman,' that the pen of Golden-pencilled fowls with which I won the Wellington Cup were purchased from Mr. Hewitt, or bought by Mr. Hewitt for me, at 12s. each, a *sum*, you say, they were not worth. This remark, like the others, is most false and unjust. I declare most solemnly that, to my knowledge, Mr. Hewitt had never seen the hens when I purchased them, neither have I ever had a fowl through Mr. Hewitt either as a gift or purchase; nor did I ever know Mr. Hewitt kept Golden-pencilled Hamburgs; neither do I believe Mr. Hewitt ever bought a pen of Golden-pencilled Hamburgs for any one; but a note addressed to the Secretaries of Shows that have been held will soon prove that. I do not believe Mr. Hewitt ever had a Golden-pencilled Hamburg in his possession. I never knew that he kept anything besides Laced Bantams. The hens alluded to I purchased at the Birmingham Show (1855), pen —, then belonging to the Rev. —. The pen was ruined by having a wretchedly bad cockerel in it. I should certainly have asked Mr. Hewitt his opinion about them, but could not meet with him, and subsequently had the advice of Mr. W. Tyler, of Friday Bridge, Birmingham, who considered them very first-rate. When they won at Wellington I recollect telling Mr. M'Cann, of Malvern, what I gave for them, and he said, in the presence of several whose names I can mention if necessary, that he thought them the best hens he had ever seen, and particularly wished to have some eggs;

so that your friend and your own opinion must differ widely from the gentlemen before named. Pray give me the name of that gentleman who wrote to you, that the world may know who is right and who is wrong. The cock in the said pen had won eleven first prizes from the hands of Messrs. Baily, Cottle, Jennens, Pulleine, Bond, and others, as well as from Mr. Hewitt. The hens cost me, instead of 12s. each, 16s., and if you can find some equal to them I will give you double that sum for them. I have no doubt that, in a general way, I give as much for my poultry as any other exhibitor, and probably keep them as well when I have got them; therefore, why should I not win sometimes? You say that you have heard many amusing statements which have been made about my purchases through Mr. Hewitt, and their after-success. This, again, is also false, and without the least foundation. I admit you may have heard it, but must here beg to know the names of those who told you. I can say most positively that the pen before named, and a pen of the same kind I bought at the Salop Show in 1853, are the *two* only pens I *EVER* purchased, or had purchased for me, at *any* Exhibition, and I can say with confidence that the name of the party from whom I have my Ham-burghs neither yourself nor Mr. Hewitt knows.

* * * * *

"I have no hesitation in saying that most likely I should have received stronger expressions than those of which you complain if I had acted towards you as you have done towards me.

"If exhibitors are to take notice of a jocose remark made at a Poultry Show, and attach an evil meaning to it, the poultry world will soon be at war. For instance, I heard many say at Birmingham, 'Oh, the Judges know Worrall's old G. S. as well as they know their own mothers,' or a remark very similar. What mischief may be made out of that 'off-hand saying!' You say you never pay income-tax upon the profits of your poultry; *neither* do I. I *never* kept them for profit any more than yourself, and it seems I cannot keep them to 'lose by' without great unpleasantness.

"The very cup alluded to I gave to the Wellington Secretary as a token of my respect for him, who undertook the sole management of the Show without a single individual to help him.

"I am, &c."

Commenting upon the whole case Mr. Hewitt wrote to us as follows on the 19th of February:—

"Mr. Worrall says Mrs. Sharp made a certain assertion. This she (as distinctly as language can do) says *never* occurred, whilst Mr. Chune as positively denies the bare-faced and glaring imputation. As most undeniably Mrs. Sharp never *did* utter such assertion *in my hearing*, of course I *could* not contradict it. Mr. Worrall's statement, that the asserted 'partnership' did not '*at all affect Mr. Chune's moral character*,' is simply a subterfuge to escape the consequences of such 'cruel and cowardly injustice' as was manifested at the onset in propagating so untrue an assertion. His adduced 'authority,' like his other statements usually, fails him in the hour of need, and when *most* wanted. As to advising Mr. Chune 'what fowls to purchase, I never did so except *once*, viz., at Shrewsbury, some three or four years back, and then they were 'claimed' by Mr. Chune *HIMSELF*, as is ordinarily the custom in such cases. I have advised Mr. Worrall also in like circumstances, but *never bought anything for EITHER party*; whilst, in compassion to a now self-convicted and down-fallen adversary, I will not here add to his personal degradation by stating wherein the 'motive causes' that led to his unmerited persecutions of myself have arisen, more particularly as they would have the most direct tendency to injure 'the poultry fancy.' I will, therefore, rather leave him to his own mental cogitations, which will strike home enough in all conscience; but must simply add, if my assumed 'friendship' for Mr. Chune was really sincere, according to Mr. Worrall's own statement—'that the fowls were *not* worth the money'—it proves, even to the most obtuse intellect, that mine must indeed have been a most unprecedented mode of *evincing* my personal interest in Mr. Chune as a friend and 'partner.'

* * * * *

"As the whole tenor of Mr. Worrall's spontaneous aggression on myself is evidently to indirectly impute that I have

made the office of Poultry Judge a *money-getting concern*, I at once fearlessly appeal to the many Committees throughout the kingdom, who, when asking me by letter the sum expected for my services in that unenviable capacity, received replies tantamount to the following:—'Not being engaged in either business or profession I have never made the office of Poultry Judge one of pecuniary consideration. My services, therefore, you are welcome to gratuitously if desired, always providing my unavoidable travelling and inn expenses are defrayed by the Committee.' Even these latter amounts in some score of cases were also paid by *myself*, and by such Committees have never been refunded me.

"In conclusion I will only say, that but for a private note from one of the Preston Committee stating the aggression, this gross libel would, of course, have remained 'uncontradicted,' because unknown, and such consequent impunity would doubtless rather have encouraged to still farther *covert* acts of 'cruel and cowardly injustice;' and all this entirely because the glittering baubles Mr. Worrall pre-hoped for were, by my conscientious award, finally found glistening on the sideboard of a very much more worthy competitor.

"The opponent who meets face to face those he unscrupulously condemns is certainly worthy of *every* respect and courtesy; but he who, on the contrary, secretly and wantonly blights the character of those he has not moral courage to openly assail is only deserving of the most unmitigated contempt. This whole affair proves from end to end that birthright alone and the possession of broad acres are not inseparably the adjuncts of 'respectability.' This must ever rest, contrariwise, exclusively with the personal conduct alone of the individual *himself*; nor do I imagine the esteem of poultry amateurs generally will be greatly insured by the heartless practice of writing private letters of defamation.—EDWARD HEWITT."

Other letters passed between Mr. Chune and Mrs. Sharp upon the same charge of partnership between Mr. Chune and Mr. Hewitt; but as Mrs. Sharp merely repeats, "I neither made such an assertion, nor ever heard any one else," these letters need not be published.

This transaction, coupled with the fact of the endeavour made to bribe Mr. Hewitt not to go as Judge to Preston, as was detailed by Mr. Hewitt in our No. 436, and the charge then made that Mr. Hewitt was in partnership with Mr. Wright, of West Bank, near Runcorn, shows an amount of folly and of spite engendered of disappointment that rarely has to be recorded. The gentleman who charged Mr. Hewitt with being in partnership with Mr. Wright was Mr. Tate; but, as he seems ashamed of the part he took in the calumny, and assures Mr. Wright, in a letter now before us, that he considers Mr. Wright's "honour remains unblemished," no more need be said on that charge.

We join Mr. Wright in hoping "that this will be the last we shall hear of such proceedings; for if successful exhibitors are to be subjected to such attacks as these, confidence in the Judges, and of all persons connected with poultry, will be destroyed, and the interests of the poultry fancy will suffer very materially."

No one of our readers will dissent from our judgment that Mr. Hewitt has been falsely accused, and that the accusation was engendered in the hearts of those who found that he fearlessly and unbiassedly gave his awards as a Judge. Long may he continue to issue such awards; for were he to be driven from officiating as a Judge, exhibitors would lose the services and the protection of a truly honest and competent authority.

CRITIQUES ON COMMITTEES AND JUDGES.

Now that the last of the Shows has taken place, and the season of quiet succeeds to that of wild excitement, an old poultry amateur may while away a dull hour, and venture to send a few lines to your pleasing periodical. Although fond of the pursuit, and following it everywhere without being an exhibitor, I have never ventured either with you or the old CHRONICLE to intrude myself when better matter claims the space. When in my Wednesday morning reading I come

across anything that disturbs me, I reserve it till opportunity serves.

I was lately on my way to a Show in the North. Travelling by myself, and well wrapped up, I sat me down in the corner of a second-class carriage on the London and North Western. In the next corner a stout fellow seated himself beside me, slung his hat to the roof, unfolded a spacious rug, which testified his nationality, inasmuch as it was "Union Jack" pattern, placed a comfortable cap on his head, and, after looking around, said, "Second-class carriage with a vengeance!" He waited, but met with no reply or notice. "I say these carriages are shameful; everything is kept for the upper classes."

I ventured to remark he could go first class if he liked.

"Thank ye for nothing," said he; "I know I can by paying."

"I think," ventured I, "that as much is done as it is possible to do. We have first, second, and third classes, suiting in price as nearly as possible the upper, middle, and lower classes."

"Don't tell me," said he; "I want the same for one as the other."

"But," hazarded I, "it would not pay; and it is, after all, a thing of calculation of expense and revenue."

"Don't tell me," he shouted; "we should all be treated alike."

Fearing an argument, I took out THE COTTAGE GARDENER, my travelling companion, and there I saw an article, signed "SAM SLICK," on the Liverpool Show then about to come off. "Now, Sam," thought I, "good, clever, cutting, 'cute Sam—what! Sam raving about 'injustice, frantic injustice,' and imputing motives? Now, Sam, if you had not been a Poland fancier would you have screamed in such a manner?"

My dissatisfied friend had waited for an answer, but, getting none, broke out again.

"If all people were of my way of thinking they would give up travelling till they were better treated."

I smiled, but did not risk an answer: I went on with my friend Sam. "As to punishment, let all Polish and Sebright Bantam fanciers determine not to send any birds to the Liverpool Show." Now, here I could not make Sam out. What have the Bantams to do with it? There was a Cup for them. Sam, Sam, it is with a Committee as with the railway—it is a question of finance. Surely you have not forgotten your famous question, "How many fins has a cod fish?" You know what an effect that had. Well, then, let us ask our question: "Which are the most profitable classes for a Committee to encourage?" Only one word more, Sam: France did without Napoleon. I must, however, conclude with the wish that I shall soon read of Sam again in print.

In the same railway carriage where I was travelling the lamp was in the centre of the partition, and formed a sort of Dionysius's ear, which brought every word spoken into my compartment as through a trumpet. I found it was occupied by ladies.

"La! Mrs. Mottram, what could Mr. Smith see in that Miss Fint to choose her? Why, her hair is dark in front and almost white behind! I know, when people get old, it will be white, but in this case there is no match; and then such good-looking ones left out. It is true I think one of the others is a little deformed."

"Well, Mrs. Grove," said the other, "look at Mr. Smith's hair hanging all over his forehead, and see how he stoops!"

"My dear," said Mrs. Grove, "between you and I, I cannot help thinking there is something that —."

"Ladies," said I, "I can hear all you say."

There was immediate silence, save that I thought I could hear a titter.

I went on with my old friend THE COTTAGE GARDENER, and stumbled on "G. B.'s" letter, beginning and ending with an "unpleasant bit of duty." Sam—not Slick, but Weller—would have said, "Just what the colt said the first time he wore the dumb jockey."

Poor Judges! I daresay you tried hard, and thought you were doing well; but it was all a mistake. Your first pen should have been third, and your second first, and the poor little unnoticed pen that blushed unseen should have been second; and, after all, it would almost seem to be a choice of evils. Spinal complaints predominated, and the third prize was crooked; and (wonder of wonders!) the giants

among Polands, Dr. Horner and Mr. Coleridge, both sent crooked birds. The Bar and the College of Physicians both detected by "G. B.!"

I was here interrupted by Mrs. Mottram, who, after a long whispering, said, "Perhaps you want him yourself."

"Oh, Mrs. Mottram!" said Mrs. Grove, "you know I am not on the list."

"Ladies," said I, and continued my reading, in which "G. B." says he is not a disappointed exhibitor. I believe him. With nothing else to do we will quiz each other's crotchets after the manner of the old song:—

"Or, puisque chacun a les siens,
Nous avons tous les nôtres.
A votre trésorier les miens,
Et je rirai des vôtres."

BRAHMA POOTRAS.

I BEG leave to inform you that we have got two Brahma Pootra hens and a cock hatched last April. They began to lay in September, and the one has laid eighty-two eggs, and is now laying; the other has laid fifty, and has sat three weeks, and is expected to lay again every day. The cockerel is 8½ lbs., the hens are 7½ lbs. each. Is the cock old enough to breed from?—I. W.

[The cock is old enough. We should put him with older hens.]

JUDGING POWTER PIGEONS.

THE judging of Pigeons I think calls for some remarks, particularly with regard to Powters, which, if I am correctly informed, have at some of the principal Shows been judged more by the manner in which they are pied than by any other property. This, no doubt, is a point not to be overlooked; but I think every genuine fancier of these birds will agree with me in thinking that there are several points of far more importance, which ought to take precedence of marking, such as fine shape, length and covering of limbs, and length of feather. These points, at least, if not others, ought to be considered before colour, or disposal of colour, as it is well known to all who have any experience that many of the very finest birds ever bred have been deficient in the latter property; and, on the other hand, how often perfectly-marked birds are found deficient in the other more valuable points. Our great barrier in the way of breeding to a feather is the oft-recurring necessity of having to get fresh birds for crossing to keep up size, &c., and it is not always in the power of fanciers to procure well-marked birds for the purpose, neither would it be prudent to take such unless they had the other good points as well.

I trust no one will suppose from these remarks that I am quite indifferent as to how a Powter is pied; my object is merely, if possible, to prevent this taking the place of more valuable properties, and which, if acted upon, I am afraid will soon have the effect of producing a puny, degenerate breed, quite unlike the fine, stately Powter; in fact, more resembling the Magpie or Nun.

If the old standard of excellence is to be put aside it will be necessary for societies to give some information in their prize-lists as to the order in which the points required will be considered. This would save a deal of grumbling and disappointment, as fanciers would then be able to judge if their birds had any chance of success. Before quitting this subject I would beg to call attention to another rule, which I believe is good on the whole. It is, that a pair of Pigeons must be of one colour. Now, in the case of Carriers and Powters it is not only allowable, but, at times, commendable to match birds of different colours together; and if so, I see no good reason why they should not be shown together as a pair. Should this not be conceded the Crystal Palace plan of showing these birds singly should be adopted, though there are objections to this too.—A COUNTRY SUBSCRIBER.

OUR LETTER BOX.

REARING EARLY DUCKLINGS.—"Would you have the kindness to explain to me how the Aylesbury Duck breeders manage to rear their Ducklings, and to have Ducks' eggs so early in the season? I mean what system have they of feeding them so fat and so rapidly as I understand they do? And at the same time I should be much obliged if you would inform me whether the first year's eggs of Geese are worthless for sitting purposes; and what kind of Geese you would recommend as being the most profitable."—A TWO-YEARS' SUBSCRIBER.

[We should be very happy to give you all the information you require, but it would fill our **POULTRY CHRONICLE**. To get the early eggs you must have young birds hatched in May, and fed on stimulating food. The young are kept entirely in-doors, and very warm, with no more water than a pan will contain. They are fed on brewers' grains, greaves, hemp seed, bread, or anything they will or can eat. The neglect of a few hours will undo the work of a week, and often throw them back entirely.]

The brown Geese are the best. The first year's eggs are not worthless, but the second are better. We would recommend you, if looking for profit, to buy two birds in your neighbourhood, and to buy them one here and one there, the largest you can find. The best-informed people on Geese are the old women who breed them.]

EGG HARVESTS.—*Abel Nott* asks, "Will your correspondent, 'H. D.,' page 298, state what are the dimensions of his 'inclosed yard,' and also if the fowls were quite confined to it?" Heading down your Spruce and Cedar will be useless.

MANAGEMENT OF GESE.—"If you could give me advice for the management of Geese I should be obliged, viz., if the eggs should be left in the nest as they are laid, and, in the event of young gulls (goslings), should they be kept from the water? what best to feed on, &c., and if the goose should be put under a coop or not?"—A NOVICE WITH THEM.

[Your Goose's eggs should be taken away as they are laid. The gulls should not go into the water till they are three weeks old. The Goose should be put in some small building with her brood. An old pig-sty is a good place. The young must be fed on oatmeal, onion tops, and grass. When let out they may have oats.]

CHARACTERISTICS OF A GOOD CRÈVE CŒUR.—"Will you be so kind as to state what are the chief points in a good Crève Cœur fowl for exhibition; which are the best layers, Crève Cœurs or White-crested Polands; and which are the easiest to rear? Our space is rather confined. Eggs our chief aim."—J. W.

[The points of Crève Cœurs are not yet sufficiently settled to justify us in publishing them. We should give the preference to White-crested Polands for laying, but they will not bear confinement as old birds, nor can you rear their chickens in a small space. We are by no means sure that the Crève Cœurs are what you will require. Cochins, Brahmas, Spangled Hamburgs, or coloured Polands would suit you better.]

BEST DUCKS FOR LAYING.—"Will you please to state which are the best Ducks to keep for laying, the Rouen or the Buenos Ayres? We have the White Aylesbury, but we want a change. Please to say which you would recommend. Eggs our chief aim."—J. W.

[Either Rouen or Buenos Ayrean will suit you. They are both hardy and good birds. We should say the last one is the most prolific, and they are most excellent for the table. The eggs of the Rouen are larger than the Buenos Ayres.]

FLOORING OF POULTRY RUN.—"I keep seven hens and a cock, the greater part Cochins, but am obliged to confine them to a limited space at the side of the garden, thirty feet long by five feet broad. The floor I have had covered with gravel, with six inches of rough stone at bottom for drainage; but the fowls are continually scratching it in holes, and bringing the stones to the surface. Now, I want to prevent this unsightliness, and contemplate covering the floor with concrete, or something of the sort that they cannot disturb. Do you think it would affect the health of the fowls, or be too cold, &c.? If you think it would answer perhaps you would kindly advise me how to proceed."—C. L.

[Do not object to your fowls in their limited space having not only the luxury, but the absolute necessary for their health, a place to busk in, and pick up insects and pebbles. The rake every evening will put all smooth, and then no very great eyesore can be wrought by them; but a dust bath is as necessary to fowls to keep them clear from vermin as water is to ourselves.]

SPANISH COCK'S LEG PARALYSED (W.).—This probably arises from the rupture of a small blood-vessel in the head. Keep the bird quiet, in a cool, but not cold, place. Give him nothing but soft food, and that chiefly of boiled potatoes and boiled rice, with very little barley-meal, but plenty of green food. The oozing of blood may stop, and that which has oozed be absorbed. He will then recover the use of his legs.

COCHIN HEN'S LEG PARALYSED (A. Wood).—The above reply is applicable to your case.

LOST BASKET (An Exhibitor).—This loss too often occurs at Exhibitions. Committees would do well to have a superintendent of packages.

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WEEKLY CALENDAR.

D M	D W	MARCH 10—16, 1857.	WEATHER NEAR LONDON IN 1856.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
10	TU	Lungwort (<i>Pulmonaria</i>).	30.120—30.079	51—35	N.	—	27 a. 6	54 a. 5	rises.	☺	10 26	69
11	W	Elm (<i>Ulmus campestris</i>).	30.080—29.883	44—19	E.	—	25	55	7 a. 5	15	10 10	70
12	TH	Wych Hazel (<i>Ulmus monta</i>).	30.006—29.944	43—31	N.E.	—	23	57	8 15	16	9 54	71
13	F	Elder (<i>Sambucus niger</i>).	30.070—29.988	42—31	E.	—	20	59	9 27	17	9 37	72
14	S	Squill (<i>Scilla bifolia</i>).	30.140—30.103	43—28	E.	—	18	VI	10 40	18	9 20	73
15	SUN	3 SUNDAY IN LENT.	30.144—30.090	46—32	E.	—	16	2	11 54	19	9 3	74
16	M	Whortleberry (<i>Vaccinium</i>).	30.023—29.949	50—39	E.	68	14	4	morn.	20	8 46	75

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 52.4°, and 32.9°, respectively. The greatest heat, 68°, occurred on the 9th, in 1836; and the lowest cold, 7°, on the 16th, in 1847. During the period 115 days were fine, and on 81 rain fell.

WOO'DSIA ILVE'NSIS.



THIS Fern has been included by various botanists in the genera *Acerostichum*, *Lonchitis*, and *Polypodium*; but they have uniformly retained the specific name *Ilvensis*, which is one of the illustrations of the absurdity of naming a plant after the country where it was first found. *Ilvensis*, or *Elban*, refers to the Isle of Elba, where it was originally discovered; but since then it has been found in Britain, all over Germany, the Alps, the Pyrenees, Siberia, and even Greenland. The true rendering of the botanical name, then, is the *Elban Woodsia*; but it has also been called *Oblong Woodsia*, *Hairy Woodsia*, *Downy Hair Fern*, and *Opposite-leaved Polypody*.
Roots tufted, numerous, long, smooth, blackish, fibrous. *Fron*ds several, in a tuft or group, erect, spear-head shaped in general outline, from two to five inches high. *Stem* pale brown, slightly scaly, very elastic and wiry, about one-fourth without leaflets, and jointed at a short

distance from the roots. At that joint it falls off when decayed. *Leaflets* stalkless, egg-shaped, bluntly-pointed, deeply cut into segments, somewhat wavy, and rolled back at the edge; opposite at the lowest part of the frond, but alternate at the top; upper surface milky green, smooth, but sprinkled over with a few hairs or slender scales; under surface densely covered with similarly fine, glossy scales and jointed hairs, and nearly covered with fructification. *Fructification* in round, convex masses, variously placed at the points of the very irregular and indistinct veins; the masses are separated whilst young, but soon become crowded. The *sori* are on a small, membranous, roundish cover, of which the edge is fringed with very long, taper, jointed, hair-like segments.
This, one of the rarest of our Ferns, is found only on the highest and bleakest of our mountains. It has not been found in Ireland.
In *England* only on Falcon Clints, Teesdale, Durham.
In *Wales*, at Glyder-vawr, near Lyn-y-cwm, and Clogwyn-y-Garnedh, Snowdon.
In *Scotland*, between Glen Dole and Glen Phee, in the Clova Mountains, Forfarshire, at an elevation of between 1,600 and 1,700 feet.
Mr. W. Reeve states that the two Woodsias require the same treatment, and are cultivated chiefly for their minute beauty, being so small that they will be almost lost upon a rockery or Fernery of any size. They are, however, well adapted for cultivating upon small Ferneries, with such companions as *Asplenium trichomanes*, *Allosorus crispus*, the *Asplenium ruta-muraria*, and others. They may be cultivated, also, in pots successfully. They require a very open soil, composed of equal parts turfy peat and light loam, with a very free admixture of finely-broken charcoal, sandstone, and silver sand; the pots to be one-third filled with finely-broken crocks or sandstone; upon this is to be put a little sphagnum or fibry parts of the peat, and the remainder to be filled with the above compost, placing the little plant in it as you approach towards the top, keeping the crown of the plant above the pot's rim, and round it placing a few small stones. Great care must be exercised so that the plants do not become water-logged, for this is almost sure death to them, they disliking nothing more than stagnated moisture. What moisture is given is best given by means of placing the pots in a saucer of water for a few minutes. When the moisture

is seen rising through the surface remove the saucer, and set the plants again to drain.

The same directions may be followed in planting these Ferns in a rockery or Fernery, placing the pieces of rock or stone firmly round the base of the plant, so as to keep the soil firm to the roots. The plants may be increased by division, which will require great care and nicety. They may also be increased by the fructification. They succeed remarkably well in the close, warm temperature of a stove, but will do quite as well, and perhaps better, in a greenhouse.

BROCCOLIS, THEIR PAST HISTORY AND PRESENT POSITION.

EVERY observing and experienced gardener knows full well that a great change has come over the Broccoli seed trade during the past twenty years. Formerly seeds were packed in brown paper, devoid of all decoration, with the name in plain English written thereon: the "superbs" and "splendids" of the present day were then unknown. Forty years since we had such as *Early Purples*, *Late Purples*, *Late Whites*, *Siberian*, *Portsmouth*, the *Sulphurs*, &c., and few other names could be found in the shops: about eight names would comprise the whole stock. Now, if we were to search all our noted catalogues, we should, perhaps, be able to count three score of kinds. The worst of it is, that we have few names at this period by which a person ignorant of the Broccoli family could guess at their character and merits. Such names as "Protecting," "Particular Late White," "Winter Broccoli," &c., we can understand very well—they at once convey their meaning; but who that does not know this numerous family could guess at the character of a "Dilcock's Bride," a "Waterloo" White, &c.?

The first great change in the Broccoli family took place, as far as I can remember, about the year 1817, or about that period when the late Mr. Grange, of Kingston or Hackney, made a great noise amongst the Broccoli growers by that famous kind known then as "*Grange's Impregnated Broccoli*." This Broccoli, could we obtain it pure as it came then from Grange's hand, would, with the Cauliflower, *Capes*, *Snow's Winter White*, and another or two I could name at this period, without the assistance of all the boasted new kinds, enable a good gardener to keep up a supply the whole year, or nearly so; yet the new lists of superbs, &c., boast this feat as a thing of modern invention.

As to Cauliflowers, strange to say, they never seem to vary—certainly not to improve. In my opinion good Cauliflowers were more easily obtainable forty years since than at the present period. At that period I was engaged at the seed counter, and we used to get our Cauliflower stock from some celebrated growers at Milbank, persons who grew it for the trade.

The introduction of Grange's Impregnated seemed to form a new era in Broccoli culture. How this variety was produced I know not, but imagine it must have been a cross between a good Late White and a Cauliflower. The *Capes* had been introduced some time previously, but how or from whence I have never been able to ascertain, and should feel obliged to any one who could instruct me on this head. They differ so much in habit and general character from all the other Broccolis, that they might almost be taken as a species. Judging from their name, we might infer that they came from one of the great *Capes*, but surely not from Cape Horn or the Cape of Good Hope.

The introduction of the latter class proved a great

boon to gardeners, as they readily produced a supply during part of August and through September, which period had hitherto proved most difficult to the old gardeners; in fact, they served at once to connect the Cauliflowers of the past summer with those of the approaching Michaelmas, and thus a supply of one kind or other could be secured the whole year round.

One thing, however, was wanting; there existed a blank of about three weeks between the latest spring Broccoli and the earliest Cauliflower under glasses, and this was at last filled by the introduction of a kind called "*Particular Late White*." About twenty years since I received a packet from the late Mr. Knight, of the Exotic Nursery, now Mr. Veitch's, in the King's Road: this packet was labelled "*Somer's Particular Late White*," and a most excellent Broccoli it was; but I have never been able to get the same since, albeit I have received a paper with the same name repeatedly, but the contents were generally "*particular bad*." This was a singular Broccoli; it scarcely seemed to be excited by the rising spring temperature until April, when all of a sudden it began to produce abundance of small leaves in the centre, yet with scarcely any appearance of a head. To be sure a green knob might be felt in the centre, but nobody would have fancied such could become a good head. Yet this was the case, only it required a long time in which to develop it, and this fact constituted its peculiarity and its merits. This Broccoli came to hand in the first three weeks of May, and was succeeded by the early Cauliflowers under glasses, not leaving a day blank.

The *Protecting* class were also a boon to the gardener, and originated under that name more than a score years since. These, when true, are valuable; for, if sown about the first week in April, they will form heads early in February if the spring be anyways mild; and as their leaves all converge into a kind of cupola, they, as their name imports, protect themselves, and if anything suffers it is the foliage which so surely encases the head.

Beyond the kinds here described, as far as I am acquainted with their history, I am not aware that we have anything really new. There are numerous synonyms existing amongst these, as among other things, and people should be cautious how they select.

One reason exists, as I think, for purchasing a new kind or two every season. When a raiser brings out a new sort he of course intends to charge a good price for it, and if he has been at the pains to select a good stock he deserves extra remuneration. Now, when Broccoli seed of new kinds will bring 1s. 6d. per packet, or say about 8s. to 10s. per ounce, it pays well to look sharp after it; but in due time, be it what kind it may, it comes down to 1s. or 1s. 6d. per ounce, and no longer constitutes an object of so much concern. The name still appears in the catalogues, but it is no longer the same material, and, after a few re-appearances, finally disappears altogether, and gives place to the novelties of the day. Now, this is a point which all purchasers should bear in mind, and I believe it will be found correct.

The difficulty of saving Broccoli seed true is acknowledged on all sides. I suppose it is not possible to obtain a pure stock if two kinds are in blossom at the same time in the same garden. How far Cabbages, Turnips, and other greens may influence the stock it is impossible to say; but certain it is that, being so closely allied, they are all to be regarded with suspicion. Hence the Broccoli question will always have its difficulties. It is a pity but some arrangement could be entered into by which our market gardeners could be induced to grow one kind each, and thus accommodate each other, as well as make a respectable profit in the stock being recognised by the public.

The *Capes* before alluded to, which are, when true, of great importance as links in a chain, are more apt to degenerate, perhaps, than any. This is most unfortunate. It is a custom with some gardeners to sow a border of *Capes* in drills, about fifteen inches apart, in June, and merely to thin them out in the drills to about a foot. Such a border may be visited any time during September and October, and a dish of nice little Broccoli may always be obtained.

In casting our eyes over the Broccolis as a body, we may see, I think, just six distinct classes. 1st, the *Capes*; 2nd, the *Impregnated* and *Walcheren*; 3rd, the *Branching*; 4th, the *Midwinter Broccolis*; 5th, the *Spring Broccolis*; and 6th, the *Particular Late Whites*. The *Capes* may be described as coming into use from the middle of August; the *Impregnated* through September, October, November, and December; the *Branching* through January and February, or later; the *Midwinter* in January, through February, and into March; the *Spring Broccolis* in March and April; and the *Particular Late Whites* through May, and perhaps into June.

I may here observe, as to a great variety of kinds, that if I could obtain genuine *Capes*, *Grange's Impregnated* as it was forty years since, some good *Snow's Winter White*, and the old *Somer's Particular Late White*, I could undertake, with the aid of Cauliflowers, to cut every week through the year.

As to Cauliflowers, everybody understands something about them; through all the grades of society they are in request. Mr. Robson, my clever coadjutor, has written some good things about them, and whatever he undertakes he is sure to throw light on. But I may just observe, that having a large stock in the last October, when the frosts began, I had their leaves tied together just at the points, and thus in some measure made them self-protecting, and they were in use a long time. Let me here repeat that purchasers should not aim at too many kinds; it is more their fault than the seedsmen's that their lists are so crammed with kinds, many of them having nothing to boast of but a fine name.

R. ERRINGTON.

MEETING OF THE HORTICULTURAL SOCIETY.—MARCH 3RD.

THERE was a large attendance at this Meeting; too large, indeed, for moving about and seeing the things in comfort; and if the Society goes on increasing for the next five or six years as it has done for the last six months the sooner the house in Regent Street is got rid of, the sooner our debts will be paid off, and the less need for insuring our ribs against the chances of our own jostlings. There is nothing under the sun which I value so much in a man, or in a set of men and women, like ourselves of the Horticultural for instance, as independence of character; therefore I was more pleased than not, last autumn, when I was told that the government of Lord Palmerston refused outright to give a house or home to our Society, as it had done to other societies which really needed a helping hand. This refusal was given although some of the very highest names in the kingdom were appended to the petition, asking the shelter of a government roof to the insolvent gardeners. "No, you shall never come here if I can help it," said his lordship in effect; "you are a dangerous lot; you cannot manage your own affairs like honest men; and you propagate all sorts of outlandish fancies, and even send to that troublesome *China* for things, on purpose to satisfy this craving propensity, so that no government would be safe one month under the same roof with such propagandists as you are;" and so ended the humiliating spectacle. But this "pressing

from without" will force the new Council to provide elbow room for us all somewhere else. Next winter we shall be as merry as crickets. Our managers have done famously this time; they actually have secured "Willis's Rooms" for our next winter's "propagated fancies," and in October we begin there with the Pomological Polka, and if it pays we shall have a "run" there, to get us out of all our difficulties, if we may not be said to be all but out of them already.

We balloted eleven new members at this Meeting, and had many proposals for the next ballot, and better signs than even that. Three of our very best gardeners were among the fresh candidates—Mr. Ingram, of the Royal Gardens at Windsor; Mr. Frost, gardener to Lady Grenville, at Dropmore; and Mr. Tillyard, gardener to the Right Hon. the Speaker. Such names as these are the pillars of a national Horticultural Society. Every one of them is worth ten dukes in our way. Then our head gardener, Mr. McEwen, is one of our most popular men; every gardener in the country likes him, and that is always half the battle in a popular society. Colonel Challoner was in the chair, and he repeated the assurances of our last Meeting's "chair," that the Society would live, and move, and propagate more fancies than most of us were yet aware of. He wished to ballot the new batch all in a lump, as at our last gathering; but there are some technical difficulties in the way of displaying so much merriness all at once, which the gallant Colonel much regretted "when he saw so many fair faces before him, in which he could plainly read the anxiety to see the flowers," without the bother of waiting for a dry balloting.

So the lecture began simultaneously with the rounds of the ballot-box, beginning with the fruit, among which was a new kind of *Pine Apple* from Mr. Eyles, the head curator of the garden department *within*. Three plants of this most curious *Pine Apple* were bought by the Crystal Palace Company at the Messrs. Loddiges' sale, and were handed over to Mr. Eyles, who is the first gardener in Europe to fruit this, the "*Branching Pine Apple*" of Penang and the Straits of Malacca. The extreme heat and moisture at Penang, and the richness of the soil there, have had the same kind of influence on the development of this kind of *Pine* as strong doses of stimulating liquid manure and hot, wet summers have on that of any kind of *Roses* in our own land, to force the parts of the flower from the flower character to that of a natural branch. In the eye of science a *Pine Apple*, a *Rose*, a *Strawberry*, and all kinds of flowers, are but some modification of a normal branch. That was the substance of the preface to a most interesting explanation of the *Pine* before us. The Crystal Palace fruit or *Pine Apple* was crowned with a coxcomb growth, without the semblance of a leaf farther than a short fringe, as one may see on a "coxcomb" growth of some *Sedum* or *Stonecrop*; and there were twelve or thirteen young fruit of different sizes and lengths round the bottom instead of "gills," or small suckers; and instead of crowns each of them ran out at the top into a kind of round, leafless branch, clothed with the fringe.

Next, a large book of drawings was produced to show how these *Pines* "branch" in the far East. These drawings were made for the late Mr. Reeves under his own eye, while in China, to authenticate several things which could not be depended on from Chinese drawings. There were three kinds of development, or rather, three degrees of the branching of *Pine Apples* in these drawings which might puzzle all Europe, as well as our Meeting, unless the fact had been authenticated by these drawings from the valuable collection of that honest, true, "old English gentleman," Mr. Reeves, whom we all so much miss at these Meetings. *Reevesii* and *Reevesiana* are household words in gardening; but

the true worth of Reeves shall never be made known till the thoughts of the children of men are revealed. In one of the drawings a branch issues forth between every "pip" of the Pine Apple; and the pip is, or represents the bud at the axil of the branch, the branch itself being represented in all regular Pines by a dry scale rising from between the "pips," which gives this fruit its "ragged and jagged" appearance, as the lecturer characterised the fruit. The other drawings were still more curious; but a large section of a Pine Apple in chalk on a black board enabled the lecturer to make the thing as evident as daylight to those of us who had eyes to see; and those who had not, no doubt, wished him at Penang or somewhere else, that they might get to see the flowers, and not violate their other engagements for that afternoon by waiting to "hear the end of it."

On entering the room I first met a collection of *Cyclamens*, chiefly kinds of *Cyclamen Persicum*, *Coum*, and *Atkinsii*, from the Wellington Road Nursery. They were in small nursery pots, as they ought to be; and there was a full-grown specimen of *Cyclamen Persicum* from Mr. Ingram, gardener to J. J. Blandy, Esq., with 150 flowers open upon it, and as many coming or gone, all from one "bulb;" so that the lecturer might well point with pride to the genus *Cyclamen* as the most attractive for early spring flowers of "unsurpassing neatness."

Mr. Edmunds, gardener to his Grace the Duke of Devonshire at Chiswick House, sent six pots, each of which was eighteen inches across the mouth, of the Double White Chinese Primrose, and the leaves hung over the sides, so that the diameter of each plant was above twenty inches, and if the six came out of one mould they could not match better. The style of growth and the proportions of flower and leaf were what you might call the perfection of perfect; and, if you believe me, when I came to Surbiton six years since there was hardly a gardener round London who knew more of these "Primroses" than they now do about growing Balsams: what they called Balsams at the Crystal Palace last autumn would be most disgraceful for the Isle of Man to turn out. Six years hence, if honest men will but keep rattling up the truth to them, as I told about the Ipswich way of growing these Primulas a few years since, you have only to put in as much yeast as will "work" the London blood comfortably, and you may take my word for the strength of the double X.

The Messrs. Jackson, of Kingston, were equally successful with two match pots of white and red Primulas; but there was such a demand for cut flowers this winter, that all their very large plants were stripped long since, and twenty-four inches was the diameter of their plants, instead of the thirty-four inches which I measured last autumn for my report of their collection. If these were not worth all the barn or yeast I spent in getting up the blood I never "bru'd a peck o' maut."

A large plant of a new *Oncidium*, from Messrs. Jackson, was much praised for its novelty from such a quarter—Chiriqui, a port or province of Venezuela, beyond Caraccas, in South America. It is of the very long flower-stemmed kind, and with numerous yellow and brown flowers. A pure white-lipped kind of *Lycaste Skinneri*, which was most beautiful two months ago, but now too much faded to have given to it the rank and stamp it most certainly will obtain when it becomes better known. It is the best of sixteen or eighteen variations of this *Lycaste* which I have noted. Mr. Edmunds sent a fine tall *Vanda tricolor* with his Primulas; and there was a *Cypripedium villosum* from Mr. Lawrence, gardener to the Bishop of Winchester.

The lion of the day was a new Melastomad, from the Wellington Road Nursery, called *Monochætum ensiferum*,

a lovely dwarf, bushy plant, with vivid, rich, rose blossoms in the peculiar colour of a *Chironia*. This will make a specimen plant for the shows. *Ensiform* is certainly a bad name, as nothing ensiform (sword-shaped) is seen about it; but the genus is near to *Osbeckia*, and that section is most difficult to determine botanically from dried specimens; so much so, indeed, that the elder De Candolle named six new genera out of six kinds of this *Monochætum*, and *Monochætum* itself is only a kind or one species of *Arthrostemma*, the original name of the family by Pavon.

The next lion was cut flowers of a grand new hot-house climber from Mr. Veitch, a *Thunbergia*, with leaves like *T. coccinea*, and large light blue flowers like a *Gloxinia*, but more wavy in the outline. We were told in the lecture that it was near to *Thunbergia grandiflora*, and I rather think the second name was guessed at, but I did not catch it. This is another noble climber, of easy cultivation, judging from the affinity with *coccinea*.

The Messrs. Henderson, of the Wellington Road Nursery, also exhibited two continental crosses of *Gesneras*, one in the way of *zebrina*, called *cinnabarina*, with brilliant scarlet or crimson flowers and blotched leaves, very different from those of *zebrina*, but in that way; and the second, which is called *densiflora*, looks as if it were between *Gesnera mollis* and another of that race, but the growth and foliage are not so free as in *mollis*.

Mr. Veitch exhibited, and, I believe, for the first time, a most beautiful *Camellia*, called *Saccoi Nova*, which is an Italian seedling, named after the raiser. M. Makay, of Liege, "brought out" this fine *Camellia* in 1847 or 1848, and I recollect buying one from him at the time on the recommendation of Mr. Gruneberg, now of the firm of Weeks and Co., who was then my chief hand, and who had seen it, or a drawing of it, at Liege; but next year the collection was dispersed by Mr. Stevens, and I never saw the flower till I met with it at this Meeting. It is a middle-sized flower, perfectly imbricated, and high in the centre, and a better rose colour than *elegans*. It is a gem of the first water. There were three plants of it in full bloom. Along with them was a plant of the *Camellia*, *Countess of Orkney*, a large, flat, white flower, with carnation stripes in the petals; and another plant of the same *Countess* was exhibited by Mr. Ingram, gardener to J. J. Blandy, Esq.

N. H. Nugent, Esq., showed another *Camellia*, a crimson and variegated kind, which took the form of *hexangularis*, or star-shaped. We were here told that the Chinese have a secret by which they can grow *Camellias* so as to form such flowers at pleasure; and, although their drawings are not to be depended on for correctness, the fact of such a secret is put beyond doubt by Mr. Reeves' drawings aforesaid. In addition, I may add, that in 1835 I had a *Lady Hume Camellia*, six or seven feet high, rather starved for pot room, and was never in heat more than in a greenhouse, and that year it produced above a dozen perfect hexangular flowers.

There was a good specimen plant of *Rhododendron jasminiflorum*, with seven or eight trusses of bloom, from Mr. Veitch.

Messrs. Cutbush and Son, of Highbate, sent another collection of beautiful *Hyacinths* from their nursery, and, beginning with the highest colour, here are their names:—*Robert Steiger*, single crimson scarlet; *Circe*, a fine shaded scarlet, a true lady's flower; *Waterloo*, a double red, and always good; *Mary Stuart*, a large single white; *Tour d'Auvergne*, double white; *Grandeur à Merveille*, blush white; *Norma*, deeper blush white, fine; *Baron Von Tuhl*, again the best dark blue; *Blocksberg*, double greyish blue; *Porcelaine Sceptre*, violet or porcelain blue; and *Grand Lilas*, a grand lilac, all to be bought for next year as downright good sorts.

From the garden of the Society were a lot of very useful plants, such as the new crossed Begonias, Epacris, Acacias, Conocliniums; the new large kind of Mignonette, Chinese Primroses, Polygalas; *Eranthemum pulchellum*; the white and red-fruited *Ardisia crenulata*, which they call *lentiginosa*; *Oncidium bicallosum*; *Clivea nobilis*, very fine; and a welcome hanging-basket plant, with long, trailing, hang-down-at-will shoots, having middle-sized Achimenes-like leaves and indigo blue berries, which hold on all the winter, and might be taken for knots of flowers; but the flowers are nothing. It seeds, and spring seedlings make full-grown plants for next winter, and far better plants than from cuttings; the name is *Coccocypsetum repens*. It belongs to the Cinchonads, or Peruvian Bark tribe, but not like Ixoras, Gardenias, Bouvardias, and the like, in their gay flowers, but rather as dyeing plants with *tinctoria* qualities. This, for instance, would dye yellow stockings and white feathers as blue as a bonnet "over the borders."

There was a cut branch of *Pinus Brutia*, with six green cones in a cluster, from the Hon. W. Fox Strangways. A collection of *dissected leaves and seed-pods*, from John Howes, Esq., 7, Adelphi Terrace, in London, the most exquisitely beautiful things you ever saw. Nothing but the bleached network of veins and ribs was left; but the art is all but a mystery yet.

Mr. Solomons sent a collection of vegetables and salads of continental growth as usual; but his *French Beans* were completely excelled by those from Queen Victoria, and it really was a comfort that we can more than match the French with their own Beans. The Windsor *Asparagus* (100) was also as long, as white, and as big as you ever saw or heard of in Covent Garden; but I did not hear how long it took to boil them! A large, flat basket of *Mushrooms* from Her Majesty were the most perfect specimens of good Mushroom growing which have yet been seen by the Horticultural Society. They were all of one size, a middle size, and all of them were still *closed over the gills* like button Mushrooms. Their stalks were fixed in moss, and their light chestnut colour was one uniform tint over the flat surface. Now, my young sprig of a gardener, my legacy to you is this advice—never believe that you are fit to marry a sensible woman till you know how to dish Mushrooms after this fashion, instead of tumbling them "head and heels" into a deep basket as if they were toadstools. To think of growing them like this is out of the question until you are *settled in life*.

Mr. Tillyard, the F.H.S. that is to be, sent a collection of beautiful *Pears*, "when other fruit rooms all over the country are empty." *Glout Morceau*, *Ne Plus Meuris*, *Easter Beurré*, and *Beurré de Rance*, were the chief of them. John Alnutt, Esq., Clapham Common, sent a dish of large, flat *Mushrooms*, and a *Camellia* called *Marchioness of Exeter*, as unlike her ladyship as any flower I know. A pure Pæony-flowered, half white, and half red, in mottled stripes, is a very different thing from the handsome *Marchioness of Exeter* as first described in our books. There was a fine dish of *Black Prince Strawberries* from Mr. Fleming, and *true early Black Hamburg Grapes*, five bunches; also late *Muscats of Alexandria Grapes*, three bunches; and two bunches of *Black Barbarossa*, all in the Trentham style. The new Grapes had young, green leaves attached to the spurs, as all early Grapes ought to have for a public show; not but that gardeners can distinguish between old and young Grapes at any season of the year by merely cutting a slice from the end of the spur, or piece of wood on which the bunch had grown, to see if the wood is as ripe or riper than the fruit appears to be.

At this stage was explained an error which the Society had published in the report of the February Meeting, of which I merely said "that we were told" such Grapes (*Black St. Peter's*) were "early Grapes;" but the "ex-

planation" made some of the practicals blush back to the ears. What a contrast to the powers of science in describing the branched Pine Apples of Penang! The truth seemed to be that "the latter rains" came too early last autumn to allow the late *St. Peter's* to ripen in time before the old year was fairly out; and that, having ripened four months later than in former years, and so early in 1857, they ought to be considered early Grapes. Sir William Middleton got me once into a fix of this kind. I sent in *early Potatoes* for the Christmas dinner in 1842, and the worthy baronet laughed in my face, and said no one could have later Potatoes than on the last week of the old year. After that the 1st of January was my rule to send up the first dish of early Potatoes; and, to be on the safe side, let no one plant "an *early Vinery* with *St. Peter's Grapes*" on the authority of the Horticultural Society till we learn the practice and opinions of the new gardener at Chiswick.

Mr. Butcher, of Stratford-on-Avon, sent a fine basket of *Barbarossa Grapes*. There were three or four Pine Apples, very useful sizes at home to cut for company, but not fit for a public exhibition, none of them being above 3 lbs.

The Chairman explained a resolution of the Council not to charge the annual subscriptions on fresh-made members this spring till after the 1st of May, being the end of each year in this Society. No one, therefore, who desires to have F.H.S. added to his titles need hold back any longer; the ballot-box is ready for him.

D. BEATON.

WINDOW GARDENING FOR SPRING.

(Continued from page 379.)

2nd. CLEANLINESS.—This is as essential to health in the vegetable as in the animal economy; perhaps, in some respects, even more so. I have met with some people who had a great dislike to bring their blooming cheeks into contact with water, and might fairly presume that other parts of the body were even greater strangers to the purifying liquid; but I never met with one who carried the daubing-up theory so far as to shut up his nostrils and his mouth too, and yet expect to live and be healthy. This, however, is pretty well done in the case of a plant when its leaves and green bark are covered with dust and impurities, as through these leaves functions somewhat analagous to respiration, perspiration, and digestion in the animal economy are carried on.

Respiration.—So far as I am aware it is generally allowed that the decomposition of carbonic acid takes place only during the day, and that is most effectually done when the leaves are thoroughly clean. The carbon of the carbonic acid becomes thus assimilated to the plant, and the oxygen, its other component part, is set free to act as a stimulus to vital energy. Functions are then performed similar to respiration, digestion, and assimilation. You may thus have mere expansion by means of heat and moisture, but you will have little solid addition unless you have light acting on clean foliage. It would occupy too much space to tell of the many experiments by which it has been proved that plants exhale oxygen during the day. Even when placed in an inclosed atmosphere of carbonic acid they have been found to absorb and decompose it, and make the atmosphere around them healthy by the exhaling of oxygen. Some of these experiments led to the idea of growing plants in Wardian cases, without troubling the possessor with changing the atmosphere; but though some plants will thus retain vitality for a long time, the changing of the atmosphere is now rightly reckoned a matter of importance. I have found small plants in confined places greatly stimulated to robust action by giving them air at night, and thus increasing the field whence at that time they could absorb oxygen.

Perspiration.—The cleanness of the leaves and stems will be seen to be still more important when we consider that, in addition to respiring, there is a constant system of perspiration going on, and that it reaches its maximum when the sunlight is the most powerful and the temperature at the

highest. Hales computed the perspiration of plants to be seventeen times more than that of the human body. He found that a Sunflower and a Cabbage lost respectively about $1\frac{1}{4}$ lb. weight of moisture thus thrown off by perspiration. In many plants the orifices through which these perspiratory processes are carried on are exceedingly minute, so as scarcely to be discovered with glasses of great power, such as in the Myrtle; in others they are much larger, as in the Oleander. In the Hydrangea more than 100,000 orifices have been counted in the space of a square inch. We all know what a quantity of water that plant requires in fine, bright weather. That not mere outside, but also under-side cleanliness, is needed will be further demonstrated by the fact, that though many plants have these perspiring orifices on both sides of the leaf, yet in a great number of plants they are confined chiefly to the under side of the leaves. Plates of glass, tin, zinc, or other metals, have been placed to the under side of strong-growing young Vine leaves, Hydrangeas, &c., in a bright, sunny day, and they soon became moist with dew. When placed on the upper side none was formed. This, however, is not the case with all plants. A great exception exists in all aquatic plants whose leaves repose on the water. In such leaves the perspiring orifices are uniformly on the upper side. Keep them reversed and they soon decay. In aquatics whose leaves rise freely above the water the perspiring orifices, as, I believe, in the bulk of land plants, are found chiefly in the under side of the leaves. In experiments with cut twigs and leaves placed in water it was found that many kept alive about an equal period whether the upper or lower side of the leaf touched the water. In the majority of instances, however, they remained fresh the longest when the upper side touched the water. One fact more. Evergreens, and especially those with thick-skinned, shining leaves, like a Laurel or a Camellia, perspire less freely than a deciduous plant when its leaves are young and growing freely. I have varnished the back of Vine, Hollyhock, and Sunflower leaves with a thickish solution of gum arabic, glue, &c., and they soon became unhealthy and yellow. In cases where the covering had cracked and pieces fallen off they suffered but little. The others, deprived of the power of cooling themselves by perspiration, were parboiled in their own juices. These remarks will show the importance of the sponge and the syringe in keeping all parts of window plants thoroughly clean.

AQUARIUMS.—As I have just alluded to aquatics, and as aquariums are becoming fashionable, I may mention that aquatic vegetation, in addition to lending its influence to purify the atmosphere, does also a great deal to purify the water, and render it salubrious to the fishes and other animals living in it. Had I an aquarium and could get nothing else, I would have Duckweeds and Water Crowfoots growing freely over it. Were I thirsty and coming to two ponds in a moorland waste, the one clear of vegetation and the other covered with Duckweed and *Ranunculus aquatilis*, I would go to the latter, and lap away until I was satisfied.

SUCCULENT PLANTS.—Other things being equal, the more freely plants perspire the more attention will they require, especially when in such artificial circumstances as growing in a window. When growing naturally in the open ground the rate at which a plant perspires is of less consequence, because there is no limit to the space from which its roots can absorb moisture to supply the demands made by a free perspiration. As succulents perspire very little, and absorb moisture from the atmosphere very freely, rendering them but little dependent on moisture at the roots, the whole tribe of Cactus, Sempervivums, Mesembryanthemums, &c., are peculiarly fitted for amateurs who have to be much from home. The chief things are plenty of sunlight, an atmosphere not over dry, a temperature securing safety, and the stems free from dust and other incrustations. In consequence of perspiring but little they require little watering at the roots, unless in the height of the summer, and at all times will sooner suffer from too much than from too little.

PROTECTION FROM DUST.—In every room in which plants are kept there will be dust, less or more, and especially when a general dusting and cleaning-up take place. Here, as well as in many other cases, prevention is better than cure. Many plants are so downy that it is next to impossible to get all the dust from them when once it has found a lodgment. To avoid this some of our friends remove the plants out of

the room when dust is likely to be disturbed; others have their plants in a stand, with open sockets at the corners, in which the ends of iron hoops, or hoops of stout hazel rods kept on purpose, are fixed, and a clean cotton cloth thrown over and tied beneath keeps them quite clean. When the dust left has quietly settled down again the cloth is carefully removed and shaken out of doors. The same cloth, used in a similar manner, is also useful on a very cold night.

CLEAN WINDOWS.—I have no occasion, after what has been said, to utter a word about keeping the pots clean and free of all green, slimy, fungous vegetation. I need not add a word as to keeping window-sills and plant-stands scrupulously clean by frequent washings. I am sure that those who have read thus far will require no urging to keep their glass clean, free of dust, fly markings, and pretty spiders' webs in the corners. Crusted windows are more pardonable in towns; but there, on that very account, clean windows are the more valuable for keeping people cheerful and the plants healthy. A window through which you cannot see is enough to give any one a fit of the blues. In answer to many inquiries as to whether plants in windows could be grown under such and such glass, and covered and fluted in a certain way to prevent people seeing through it, &c., I reply, that the best plate or best crown glass is what I would prefer for a sitting room, alike for my own comfort and the health of window plants. Then, in dull weather, the plants will receive all the light possible. In sudden changes in spring from dull to bright, and in very bright weather in summer, there may frequently be more light and heat than the plants will quite relish; but then a pretty thin muslin curtain will place the plants quite at their ease, or you might remove them farther into the room. I believe that glass might be slightly tinted with green or violet, so as not to injure plants inside of it, and people could not easily see through it; but neither would you if you wished to look out. Rough and fluted glass would permit enough of light to pass, and exclude a portion of the heat; but there is no seeing through it comfortably. A lady saw a gardener sizing and whitening his front sashes, and she went home and did the same with her window, and did not like the result. Her plants became weak and drawn. She forgot that the gardener admitted light from above and behind, though he shaded the front. In her case, the windows being shaded, all the light was shaded.

Although, then, things may be grown freely behind ground, rough, or fluted glass of good quality, yet for window plants I prefer clear and clean glass, and a muslin curtain when necessary. Of aspects, all things considered, the south is the best, then west and east; the north is the worst, but in such an aspect plants will remain longest in bloom.

IRRITABILITY OF PLANTS.—In alluding even thus incidentally so much to cleanliness, I give it a prominent place in the elements of success. A great point is gained when we come to look upon a plant as an organised existence very different from a clod or a stone, and with powers of irritability frequently approaching that of sensation in animals. I have seen many gaze in wonder at the mysteries of the Sensitive Plant (the *Mimosa pudica*), whose leaflets droop at the slightest touch, and from that day become more earnest and careful cultivators. I have seen dozens of boys and girls watching the leaflets of various Acacias, the *Cassia corymbosa*, and even the common French Bean, folding back and going to sleep at night, and I have been assured that they in future experienced a love and a sympathy for plants which they never felt before. When we find our young people talking of the shaking vagaries of the side leaves of the *Hedysarum gyrans*, while the terminal leaflet alternately rouses itself into wakefulness and then lulls itself again to drowsy repose; when you hear them making out lists of flowers that open and shut at certain hours and in certain states of the atmosphere, some at mid-day and others at midnight, or of others that throw off their perfume in compliment to the sun, while others hoard up such treasure in honour of the stars and moon; when you hear learned discussions on how mineral and vegetable poisons exercise a similar and as destructive an influence upon plants as upon animals; and when you listen to expressions of delight at the beautiful harmony and reciprocity existing between the vegetable and the animal world, then, indeed, may we expect

to see beautiful plants more generally in windows, and the culture of them attended with a charm and an interest never formerly known.

R. FISH.

(To be continued.)

A CHAPTER ON INQUIRIES.

TRIFLES.—I am glad to find that "EXCELSIOR" sees the importance of these little matters. "The best-laid schemes of mice and men gang aft a-glee." Why? Because in the greatness of their aspirations they overlook the *trifles* that form the only sure foundation of success. Here, too, lies the great difference between the plodding, ever-watchful practical and the very learned, scientific theorist. The latter will give a reason for every operation—a cause why he has succeeded in one instance and failed so thoroughly in another, and that, no doubt, must be a consolation to him in the many failures he meets with. The former, when asked how such and such results come about, may be able to go no farther than just to say, "Sure it is so; have not I always found it so?" but so long as he attends to the sound teachings of experience, and minds the *trifles*, he will less seldom have to grumble over mischances. Combine the far-reaching science of the one with the practical experience of the other, and the attention to trifles which that experience will ever teach, and failures will not only be less frequent and success more sure, but the operator, accustomed to trace cause and effect, finds a greater pleasure and a higher zest in every operation in which he engages, whilst such reasoning and generalising tendencies will enable him to suit and alter these operations to the ever-varying circumstances in which he may be placed.

Complaints at times reach us—and, at first sight, not altogether without reason—that such works as THE COTTAGE GARDENER, and such individuals as your humble servant, who cannot keep a professional secret, were they to be well paid for doing so, have made the whole system of gardening such an easy-looking, simple affair, that any person possessed of very common abilities could master the whole in a very short time indeed, and that the extreme confidence thus produced can hardly be broken into by a felt sense of deficiency—the first grand step in real progress, though failure after failure, and the consequent disappointments, follow quickly after each other. We might be more inclined to plead guilty if, with attempts to simplify, there had not been associated urgent reasons for attending to *little* matters—the trifles—the essential groundwork of all successful gardening. We hope that all, and especially our young readers, will so plume themselves on unremitting attention to these minutiae as to save themselves and us from all such unpleasant imputations.

On the same principle that has led "EXCELSIOR" to tell us of his disappointment I have not hesitated to record some of my own mishaps, believing that even failure is not an unmitigated evil when rightly used as the sign-post of danger. I might safely say that in nearly every case some little trifle overlooked became the cause of the disappointment. Were I to chronicle the complaints from this cause alone during the last twelve months that have come in my retired way a whole number would be necessary. Just for the sake of example and instruction let me specify a few.

Here is Mr. A., an enthusiast for getting *Cucumbers* and *Melons* from fermenting material as the medium of heating, and though he has changed the master of the works several times, he cannot get a person who can make a dung bed as his old worn-out gardener used to do. He can have abundance of little essays on this gas and that gas, this and that sort of steam; but he cannot get a bed that is not burning hot at one time,

and cold as ice at another, or this gas and that gas laying his plants withered flat on the bed; so that, instead of *Cucumbers*, he is obliged to be content with the reasons why they cannot be forthcoming.

There is Mr. B., a most painstaking fellow, whose bed is all right, as the sight of the plants within will tell you. The heat declines a little, and he claps a front lining to it not over sweet; the sashes do not fit very close to the frame, and, in a careless moment, because the night is very cold, the covering not only reaches all over the glass, but several inches over the lining, and the rank steam drawn inside through the small openings, as if with a pump sucker, acts like a blast from a hot furnace on the fine, healthy foliage; and Mr. B. abuses himself most heartily, and scratches his head all the more desperately, because "he might have known it would just be so."

There, again, is our old acquaintance, Mr. C., a most generous-hearted fellow, whose greatest pleasure seemed to be derived from being able to confer a favour, or give you something you had not got. On seeing thousands upon thousands of half-hardy cuttings striking seemingly with little trouble, he resolved to astonish his neighbours with his success; but it was long before he had the opportunity of doing so, as his cuttings damped off at one time, and were scorched off at another, because he was too magnanimous to attend to what he called the mere *fid-fads* kindly mentioned to him as the elements of success. I shall never forget one visit. He meant to astonish me, and he certainly did. He had gone to a great expense in procuring a first-rate collection of all the crack florist *Calceolarias* of the day. He had kept them over the winter pretty successfully in a greenhouse Vinery by letting them alone, with the exception of a little water. As spring came on he was anxious these should form tolerable specimens, but more anxious still that several friends, myself among the number, should receive cuttings or young plants of each. He had been warned that if he wished to have fair-looking specimens he must be very moderate in the way of giving them extra heat; but he could not see why *Calceolarias* could not be forced into large growth and plenty of cuttings as well as any other plant, merely if plenty of heat were given. He took into his councils a very clever young fellow, who had graduated in several large establishments, and who, if talking could do such a thing, could easily have talked your head off. By their joint efforts a bed was put up to give a fillip to these *Calceolarias*, and inside they became duly located; and what was meant to astonish me was the going to have a peep at this wonderful bed. On moving the sash a rush of rank steam came out, so startling, that a strong dose of ammonia or concentrated smelling salts were mild in comparison; and but for the lesson to be gained the money spent on the *Calceolarias* might as well have been thrown over London Bridge.

Then there is Mr. D., who was rather vain of a bed of early *Melons* and a beautiful house of *Peaches* nicely set. A few days of dark, dull, cold weather came, followed by one colder still, but with a bright sun along with a piercing north wind. He is afraid of this wind, or rather, I suspect he forgets the sudden change to which the plants are subjected. At any rate no air for hours is given, while the sun beats fiercely on the glass; and, if he discovers it not before, the next day shows him the rims of the Melon leaves blotched and scorched all round, and the young Peach fruit more abundantly on the floor of the house than where they ought to be. The disappointment is all the more mortifying as Mr. D. well knows that the cooling of the heating medium—the giving only a little air *early*—would have prevented the temperature rising injuriously, and avoided any necessity for large draughts of cold air in consequence; or even a little shading would have averted all the mischief.

Here, again, is Mr. E., too great to be troubled with trifles, who would scorn any hint you might drop as to the avoidance of sudden extremes. He has some nice plants growing in a sweet, kindly temperature; and, in order to give them more elbow room, he moves them from their comfortable quarters in a *cold* day, places them in a *cold* shed, transfers them to *cold* pots and into *cold* soil, and lets them all remain in the *cold* until each and all are repotted, when they are returned to the place whence they came; and then he grumbles when some plants die, others become diseased, and hosts of insects assail the whole.

And, lastly, for the present, there is our friend, Mr. F., who cannot even let well alone, whose heart, brimming full of kindness, must vent itself at his fingers in doing something or other for his *protégés*, even though his mistaken goodness be a source of harm to them; and, therefore, when he refreshes rightly a plant suffering from dryness, he cannot refrain from watering also the plants in its neighbourhood, whether they want it or not, whether they are growing or in a state of rest, and the consequence is that some plants get water-logged, and present him with the soil of a morass. Others, from this dribbling system, have the surface soil alternately moist and dry, while the bulk of the roots are perishing with drought unsuspected, and the plant becomes unable to meet the demands upon it; others, again, get rotten at the collars, from damp and moisture lodging there; and others, such as succulents, get cankered and gouty, because, instead of thanking you for helping them with water in winter, they in general would have been more obliged if you had let them alone, as they absorb through their whole surface as much moisture as they perspire.

DOUBLE PRIMULA DAMPING.—I have no doubt that "EXCELSIOR" is pretty well correct in attributing the misfortune to too frequent waterings, and the not taking care that none of that water was spilt about the collar of the plant. He says nothing of the temperature, and that, too, might have had something to do with it, taking the frequent waterings into consideration. Stiff plants in six-inch pots will bloom nicely in an average night temperature of from 40° to 45°. Such fine plants as "EXCELSIOR'S," in 12-inch pots, would require an average of from 45° to a few degrees more, or great particularity in the watering, giving it in a bright, sunny day enough to moisten the roots right through, but keeping the collar of the plant perfectly dry. This is easiest done by having it slightly elevated, and by pouring the water from a spout on a piece of crock or oyster-shell until a sufficiency floods the surface all round, with the exception of the collar in the centre. It is right, for "EXCELSIOR'S" encouragement, to mention that such large plants, when they have bloomed profusely several months, begin to show signs, by damping leaves, &c., of exhaustion, as much as saying, "I want to rest and recruit myself, and therefore, if you want to keep me, you had better remove carefully all such leaves and the remainder of the flower-stems." If manure water is given whilst in bloom it should be clear and weak. I consider it most useful, when the plant is growing freely, before it begins to throw up the flower-stems. "EXCELSIOR" has done quite right in repotting in a smaller pot; but if he could place the pot in a sweet bottom heat of from 60° to 65° it would root and recover all the faster. Were it mine, and suffering much, I should be inclined to sacrifice the flowers for this season. Every damp and cankered part about the collar should be removed. Chalk and sand put round it are good; a little lime, somewhat quick, would have been better for a day or so, and then removing it, and placing around the diseased part a little mound of powdered charcoal, and removing and renewing that after a few days. I hope the plant will be thus restored; but if, notwithstanding, the collar shows signs of giving way, it will be advisable

to cut the plant into pieces, and strike each separately in the hotbed intended for Achimenes, and thus every piece may be made into a large plant before the next autumn.

SHOULD BARK, WHEN PUT IN A PIT, BE TRODDEN FIRM?

—The bark has been put into a pit six feet by three feet, and four feet deep, and "we cannot get it to heat." As a general rule bark does not require treading, a patting with the back of a fork being quite sufficient. Our operations must be regulated by the state of the tan. If very dry it may require treading to make it more solid, and to exclude too much air, and also a slight sprinkling of water in turning it, as so long as it remains open and dry the heat from decomposition and fermentation cannot be obtained. If in a medium state, neither wet nor dry, but rather approaching the latter, no treading will be required, as the air and its oxygen will be admitted just in the right quantity to carry on the combustion, or the decomposing process. If wet it will still less require treading; it will be so close that air cannot enter, and should be turned over now and then, and left as loose as possible, that air may have access to it. It should never be used very wet if it can be avoided, but be partly dried before placing it in the pit.

FRUITING A VINE IN A POT IN A GREENHOUSE.—

"GRAPE" cannot do better than just let his plant have a good open place in the greenhouse, and let it break naturally as the weather becomes warmer. His getting fruit will depend not so much on the treatment this year as on the treatment last season. If the wood is moderately strong, the leaves had plenty of light, and the wood is hard, and firm, and well ripened, and the buds prominent, then each of these buds will send out a shoot that will carry fruit. The length of the shoots, so far as getting fruit, is of little consequence, whether it be cut back considerably, say one half, or let it remain nearly its full length, and thin the buds to half or a third of their number before the sap rises; or wait until the buds break, and then select the best shoots, so as to retain some six bunches or so altogether, rubbing off most of the other buds and shoots. If the wood was imperfectly ripened every bud may break nicely, and yet hardly any, or none at all, will show fruit. Unless I saw the Vine, to make as sure as possible of fruit I would say, prune little or none until it is seen what the Vine will do. The shoot may be twisted in a circular form to make it break regularly. If there is a good show his dependence must be upon rich surfacings and manure waterings to swell the fruit nicely. The warmest corner it can be kept in, especially when in bloom, the better.

IMPORTED CAMELLIAS (*Camellia*).—You have done so far quite right. By the end of next month, when the blooming is over, place the plants together at one end of the greenhouse, as you have no other place. Water as necessary. Syringe all over frequently; keep them closish as respects giving air; and shade from very bright sunshine by placing thin gauze or a little thin size over the glass. As soon as you see the new growth from half an inch to an inch in length take them out of their pots, remove carefully a part of the old battered soil, disentangle the fibres, and repot in a size larger pots, using two parts sandy, fibry loam, and one of heath soil, with plenty of drainage. Replace in the same position, water thoroughly when necessary, and sprinkle with the syringe to keep a moist atmosphere. In about six weeks inure to more air and light to set the buds, and we do not see how you will miss *Camellia* flowers next year.

R. FISH.

BEAUMONTIA GRANDIFLORA.

THIS lovely climber first flowered, I believe, in one of the conservatories at Bretton Hall, Yorkshire, and the plant was

consequently named, in memory of the lady of its noble owner, *Beaumontia*. Since then it has bloomed in many parts of England, but nowhere more beautifully, perhaps, than at Fixby Park, near Huddersfield, the residence of J. P. Edwards, Esq. Here, indeed, the *Beaumontia* flourishes with something of its tropical luxuriance, covering with its twining branches a space of not less than nineteen yards, its elegant trusses of white flowers contrasting happily with its dark green foliage. It is assuredly the most lovely of the Apocynæ, and to see the plant as I recently saw it, giving promise of seventy trusses of bloom, and with so much of health and vigour in its growth, was a treat I have but very seldom experienced.

The same house that contains the *Beaumontia* is wreathed with festoons of the lovely foliage of the *Cissus marmorea*, while the *Hexacentris*, from southern India, hangs its racemes, gay as the plumage of the scarlet cockatoo, in every direction. Some idea may be formed of this splendid creeper when it is mentioned that no fewer than ninety racemes, in various stages of growth, were visible on the plant at one time. The *Cissus* was covered in the autumn with thousands of its vine-like flowers, and the black, glossy fruit, like tiny currant grapes, are scattered here and there over the whole plant. As I looked on this lovely vegetation I could not but admire the nursing care that had accomplished such goodly proportions, and contrast, in my own mind, such growth and culture with the stunted and crippled growth of those exotics which so often win our admiration in floricultural exhibitions. Any one of the three, could it be removed to grace our northern Flower Shows, would become "the observed of all observers."—P. I.

MESSRS. WEEKS AND CO.'S SYSTEM OF HEATING.

As an efficient and economical method of heating forcing houses is a matter of vast importance to all persons engaged in horticultural pursuits, and as I have frequently been applied to for my opinion on the matter, I am desirous of offering, through the medium of your valuable and widely-circulated journal, a few remarks on my own experience of the subject, in the hope that they may prove useful to some of my fellow-labourers in the art of gardening.

During the last twenty-five years I have been extensively occupied in forcing both fruit and flowers, consequently various heating apparatuses have come under my notice, some of which have answered well. Since then I have had ample opportunity of practically proving the value and capabilities of Messrs. Weeks and Co.'s system, and I unhesitatingly admit that throughout my experience in the business I have never met with any boiler that will approach Messrs. Weeks' in all its various merits. Strongly as it had been recommended to me, it considerably exceeds my expectations now that I see it in full operation. During the late very severe weather we have been enabled to maintain any degree of heat that we required in either or all of our fourteen forcing houses, containing upwards of 4000 feet of four-inch cast-iron pipe, with a most economical supply of fuel, and at a very inconsiderable amount of labour and attention.—JOHN SANDERS, *Tedworth*.

TORENIA ASIATICA CULTURE.

THE mere mention of the name *Torenia* brings fresh to my recollection youthful pastimes and associations. Eleven years since, in company with one of the loveliest flowers that then existed, I visited the gardens of one of the rich merchants of Yorkshire, and, when walking through the hot-houses, my attention was drawn for the first time to a well-grown *Torenia* in full bloom. The pot was mounted on an ornamental pedestal, which was placed in the centre of the front stage of the house. The branches hung pendulously over the sides of the pot, which gave it a gracefulness unequalled by any of the plants of more erect growth that occupied neighbouring stations to it in the same house. The gardener, a first-class man of that day, after making a few

statements in praise of its beauty and native habits, took from it a few cuttings, and placed them in my hands; and on turning to my note-book for that year I find he said, "That plant (meaning the *Torenia*) was in the collection which I exhibited against Mr. Paxton (now Sir Joseph Paxton) at the Exhibition held in the Botanical Gardens at Sheffield." The cuttings I conveyed to my residence, and afterwards potted them with care, and attended to their wants with all the skill I then possessed. This was in September, and the following year they made good plants, and bloomed most profusely; and from that time to the present it has been one of my special favourites, and, therefore, you will pardon me when I offer my remarks on the culture of the *Torenia* in compliment to Mr. Fish for the manner in which he has mentioned its name in THE COTTAGE GARDENER at page 271, and for the many useful lessons I have received from the perfectly practical observations detailed by him on the cultivation of flowers, fruits, vegetables, &c.

Now, as my experience in the cultivation of the *Torenia Asiatica* commenced with raising it from cuttings, I will begin my remarks by stating that which I believe to be the easiest and most useful method of propagating it, namely, by cuttings.

In March, when the rays of the sun are more vivifying than they are earlier in the winter, but do not possess the scorching qualities peculiar to the more advanced spring and summer months, and when hotbeds are more numerous than they are in the two previous months, is, I consider, the most suitable time to begin to propagate the more tender kinds of plants by cuttings for those persons who have only limited means of protecting them at their command; therefore in March commence the operation by taking one part sandy peat, and a quarter part silver sand; mix them well together, and put through a common sieve; then select a shallow seed pan, or, what is still better, a cutting pot, so large as to hold the cuttings round the edge, and with a few holes near the centre in the bottom; cover each hole with a potsherd, so as to allow the surplus water to escape, and afterwards about half fill the pan with the soil, and press it down firmly with the hands, or with a half-circular instrument made for the purpose, and which is superior to the hands, and therefore ought to be in the possession of all who love to propagate neatly. Having done this, proceed into the stove, and from the *Torenia* with a sharp knife take off the ends of the branches close below the second joint, so as to preserve the leaves, which grow in pairs. The number of cuttings being collected, remove them to the potting bench, and take off the bottom leaves as near to the base of the cuttings as is convenient without injuring them; or, if the cuttings have been obtained from a distance, dress them with care, so as to make them all of an equal length, and if possible, as already stated, by cutting them below the joint. This being done, with a dibble a little thicker than the cuttings, and not pointed, but cut straight through at the end, insert them round the pot one-fourth of an inch from the side, and in placing the cuttings in the holes be particular to fix the base of them close to the bottom, so as to leave no space for an unnecessary quantity of air to lodge in. For want of proper attention to this thousands of the more tender kinds of cuttings perish annually. The cuttings being properly fixed, fill up to the articulation of the leaves with silver sand, raise the pan on three small blocks of wood; then water freely, and when it has well drained, take and plunge it into a hotbed, the bottom heat of which ranges at 80°, and the top heat from 70° to 75°, and, if convenient, place over them a propagating glass, which will hasten their striking a few days. Nevertheless, if it be not convenient to cover them with a glass, they will, in the course of ten or fourteen days, have struck root, and when it is ascertained that they have struck, count them, and take the corresponding number of 60-pots, and place over the hole in the bottom of each pot a few small potsherds as drainage, and having prepared the following compost, namely, two parts sandy peat, one part sandy loam, and quarter part silver sand, which must have been heated from 75° to 80°, and above half filled the pots with the compost by raising it a little on one side, turn the young plants out of the pan, and separate them from the ball with care, so as not in the least to injure any of the young fibres; place them in the

centre of the pot, and as low as they were in the cutting pan; fill in the compost equally round the plant, and strike the pot gently on the potting bench; then water with water that has had the chill removed from it, and thus proceed until the whole are potted off; then take and replunge them into the hotbed, admitting air when necessary, and shading from ten o'clock in the morning to three in the afternoon on bright days until they are established. Pinch off the end of the main stem, which will cause the branches to break from the eyes which are seated round the joints below. These must be stopped, and trained at a regular distance from each other as they advance in growth. Do not repot them until the roots have wrapped round the ball so as to preserve it from breaking when turned out of the pot. This will be found to facilitate the present, and, consequently, the future growth of the plants; but by no means allow the roots to become matted before potting them, and for the successive shifts be particular to remove them immediately after the roots have reached the sides of the pot. Take care that the pots in which the plants are to be placed are clean, and well drained with pieces of charcoal and imperfectly-burnt lime, and two or three sizes larger than those out of which they are turned.

The compost in which I have found the *Torenia* to luxuriate the most consists of the following ingredients, in the proportion of two parts fibry loam, two parts sandy peat, one part two-year-old cowdung, half part pounded charcoal, and half part rough sand thoroughly incorporated with each other, but left as rough as possible, and heated from 75° to 80°.

The second shift being completed, water them with aired water, and again plunge them into the hotbed, or, what would be more advisable at this stage of their growth if at command, into the tan bed of the stove; give by degrees more air and light until they can, without injury, endure the full force of the sun, in whose rays the *Torenia* delights while growing previous to flowering; syringe frequently with water of the same temperature as the bed in which they are growing, and do not neglect to stop and train the branches, and to take off the flower-buds as they appear, which will cause the branches to become more vigorously developed than they would if the buds were to remain on the plant.

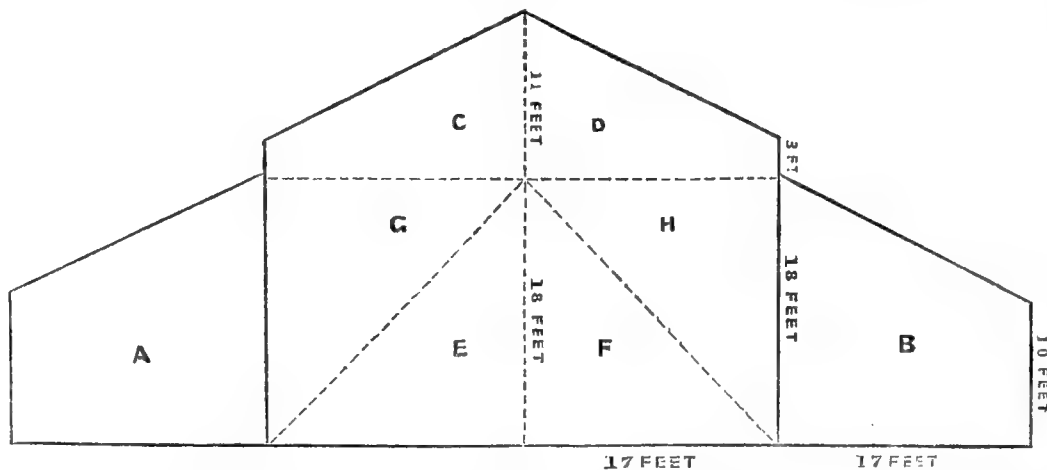
Before the third potting gradually raise the pots out of the bed, so that the roots of the plants may not be checked by the changes to which the atmosphere that of necessity

surrounds the pots is subject. When the plants have been repotted the third time, those not wanted for specimens may be profitably placed in ornamental wire baskets, and suspended from the roof of the stove, conservatory, and greenhouse, where they will, in a few weeks, have thrown their branches gracefully over the sides of the baskets, which will be covered through the summer and autumn with beautiful labiate, richly purple-blotched flowers, that will not fail to attract the admiration of the visitor; and all the attention they will require after they have been thus suspended will be to supply them with tepid water when necessary, and to use liquid manure freely, in order to keep them growing and in health, and to shorten any of the branches that may ramble too far from the plants, so as to keep them uniform in appearance.

Those plants intended for specimens, in order that they may produce that magnificent appearance which they are qualified to do, must receive two more shifts larger than those they have already had. Let, therefore, the last shift take place about the 8th of July into a small No. 3 pot. The final potting being completed, commence training them on those principles that will best show their native habits and beauty; and this, I imagine, cannot be done by tying the branches to perpendicular rods, or circular, oblong trellises that rise above the pot. That, therefore, which I would recommend is a circular wire trellis that hangs over the sides of the pot to within two inches of the bottom, and eight inches from the sides. Its appearance when fixed is that of an inverted wire basket with the bottom cut out, and looped to the rim of the pot. Over this trellis the branches ramble as though they were in their native wilds in the East Indies, and with a little tying and regulation of the branches will present one uniform mass of floral grandeur which will be commended by every lover of flowers.

The *Torenia* during the growing season delights in a humid atmosphere, and a temperature ranging from 75° to 90°; but these, I would remark, must be gradually decreased as the rest period approaches until the air in the house becomes dry, and the temperature ranges from 45° to 55°. Under these circumstances it will ripen its wood, and if the atmosphere be kept so dry as not to induce mould or mildew it will live and be healthy through the whole of the winter, and will make a nobler object the summer following than those raised from cuttings the same year.—B. B., near Halifax.

DIMENSIONS OF THE NEW CONSERVATORY OR WINTER GARDEN AT MESSRS. JOHN WEEKS & Co.'s, KING'S ROAD, CHELSEA.



It contains 100,100 cubical feet of air, or, in other words, equal to seven common-sized hothouses of say 17 feet wide, and 560 feet long. This will appear by dividing it as represented by the dotted lines, and calculating the contents of each of A, B, C, D, E, F, G, and H.

We give this diagram, not merely for showing the form and extent of Messrs. Weeks and Co.'s Conservatory, but to show young gardeners how easily they may calculate the contents of such houses. Multiply the length by the breadth, and multiply the product of that multiplication by the greatest perpendicular height. This gives you the contents of a cube; but divide this by two, and you have the contents

of a triangular lean-to house. For example, to find the contents of E:—

560	length.
17	breadth.
3920	
560	
9520	
18	height.
76160	
9520	
2) 171360	

85680 contents of E in cubic feet.

ANGELONIA ANGUSTIFOLIA.

Raised from seeds received from Mexico from Mr. Hartweg, in January, 1846.

PERFECTLY smooth in all its parts, very upright, and about two feet high. Leaves opposite, narrow, tapering somewhat to the base, slightly and distantly serrated. Racemes terminal, erect, densely many-flowered, nearly six inches long. Flowers deep violet, with a green throat, a small double tooth within the cavity, and two gibbosities at the back.

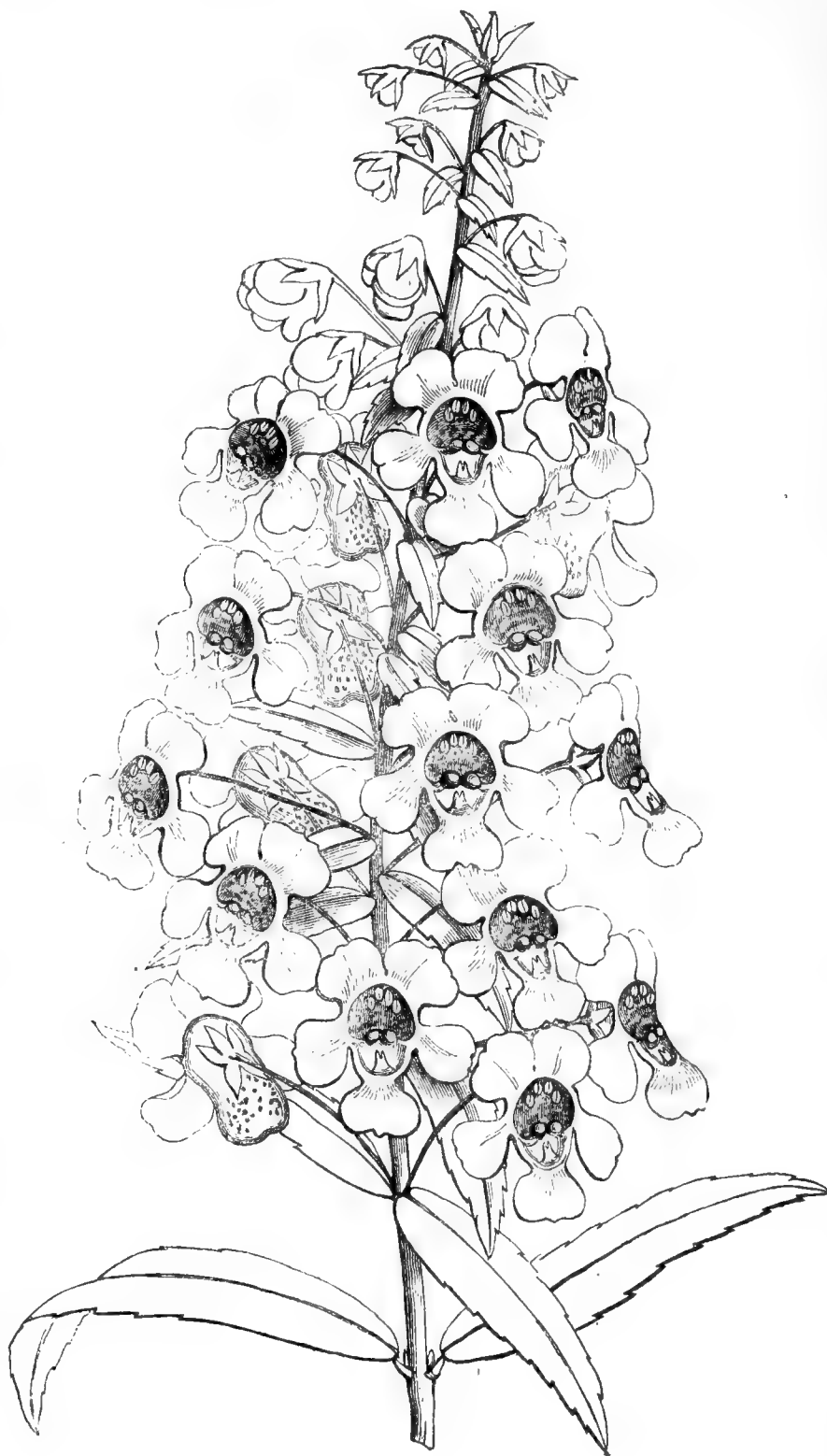
This is a half-shrubby stove perennial, which grows freely in a mixture of loam, leaf mould, and sandy peat, in equal proportions, with plenty of moisture. It is easily increased by cuttings, and flowers from June to October, but afterwards should be kept rather dry, particularly during winter.

It is a very handsome little plant, and one deserving a place in every stove or warm greenhouse.—(*Horticultural Society's Journal*.)

ON DYSENTERY IN BEES.

BEES are often attacked with dysentery in the spring; and this seems to proceed from long confinement, damp hives, and deficiency of food. A diseased colony is easily known by the blackish, foetid excrements which the bees deposit outside the hive. In such cases no time should be lost in giving the bees proper food and a little salt mixed with it, which is considered good. If possible the food ought to be placed in front of the hive during sunshine, and strong colonies near it should be confined, in order to prevent robbery or attack on the weak; but in very bad cases we prefer feeding with honey alone, and brushing off all filth from the floors of the hives. If those be damp the hives should be set upon other dry floors in the same places. When doing so examine the combs, and if they appear damp and mouldy it is good to wedge up the hives about a quarter of an inch behind, with a view to draw off the foul air from the bees. In some novel hives that may be done at top; but this only for a day or two, for cold draughts are, of course, injurious to bees at all times, but more so in spring, when they require warmth for the brood.

Though out of place, I may state that to-day, the 17th of February, I observed my bees amongst the Filbert bushes with pollen on their thighs; also a sulphur butterfly on the wing, and a large green caterpillar upon a cabbage leaf—rather uncommon sights at so early a period in the spring.—J. WIGHTON, *Norwich*.



GRAFTING HOYA BELLA.

LAST August you gave the treatment of the *Hoya bella* by grafting. I was at Mr. Backhouse's Nursery at York in July, where they had many small plants of this *Hoya*. I said I wished there was a plan by which we could grow it a few years without damping, when Mr. MacMuran made answer, "I saw one last week near Leeds that will grow as many years as you like. It was grafted on one of the stronger *Hoyas*." I found that plant in the neighbourhood, where I frequently go. It had one stick for a centre shoot, and the other shoots hung down to the pot the way I think it should be.

Mr. Dyment writes in THE COTTAGE GARDENER that he is rather surprised that you make the assertion that you seldom meet with well-grown plants of *Hoya bella* on their own

roots out of London. He gives his plan of growing it. He had a large pot of the *Hoya bella*, and he potted it four or five inches deep. Then, of course, every shoot would root; then there would be dozens of plants in the pot, with as many sticks. It just looked like a *Russellia juncea* would if tied up to sticks. By his method it takes *three years* to make a nice little plant if all goes well; whereas by grafting you have a plant in eighteen months with five or six dozen heads of bloom at one time, with leaves as firm and as brittle as a carrot. Then, again, Mr. Dyment would have *Hoya imperialis* for the stock; but I think it would be the very worst of stocks. The stock would be too strong for the weaker-growing *Hoya bella*; and the stock, I fear, would ultimately kill the top or scion.—CEDO NULLI.

KILLING WORMS ON LAWNS.

IN answer to a correspondent who signs himself "H. S.," and who inquires the best way of removing worm casts on lawns, you say, "You would need to try a most dangerous experiment, that is, to take corrosive sublimate." I have always used lime water, that is, a strong solution of lime and water, for the purpose of bringing worms to the surface of the ground. Some two or three years back I watered a cricket ground with such a preparation, and collected two or three large water-potsful of worms—they came to the surface in thousands. My mixture consists of about two or three handfuls of *fresh* lime to a water-potful of water. There is, however, no danger of making the preparation too strong. There is nothing dangerous in this plan, it benefits the soil, and gets rid of all worms.—C. P. C.

QUERIES AND ANSWERS.

VARNISH FOR RUSTIC WOODWORK.

"I have had made several rustic chairs and seats for the garden, and I want to varnish them. They are made of oak limbs. Can you tell me how to make the varnish? I hear there is an excellent plan afloat, and know of no one more likely to tell me than you."—C. W. S.

[For wooden rustic-work, such as flower baskets, &c., we know of no better varnish than that which is made of 4lbs. clear Venice turpentine mixed with 5lbs. of oil of turpentine; but for seats we do not know how this composition would answer. It might adhere to clothes pressed upon them. We shall be much obliged by any information on this subject.]

PILLAR ROSES.

"In reply to an inquiry I made last autumn respecting Pillar Roses you promised an article upon their treatment, which I have been anxiously looking for. As the season is rapidly drawing to a close I should feel obliged by a few hints on planting, &c., and the best kinds."—A. Z.

[Nothing is more easy than growing them. A hole twenty inches deep and three feet wide, filled with two-thirds good turfy loam and one-third rotten dung, and raised two or three inches above the general level of the rest of the ground; also the top formed into a basin to hold water; no pole the first two years, only some temporary stakes or rods placed in the middle of the basin, and the climbing Rose planted close to the stake, and tied to it as often and as fast as it grows to the end of the season, when the plants are to be cut down close to the ground,—that is the only secret. Any moderate Rose will grow to a pillar in time if one had the courage to cut it down to the ground the first two or three years; but the *Ayrshire* Roses and the *Evergreens* make pillars the fastest. *Rugo* is the best of the former; and *Félicité Perpétuelle*, *Ranuncule*, and *Princess Maria* are the best three *Evergreens*; while the *Crimson Boursault* is the only one of them fit for a grand turn out. *La Biche* is one of the best *Noisettes* to run fast and ripen well; and the *Musk Cluster* never fails to bloom late or early as a pillar. But where does "A. Z." dwell? The whole story turns on that point. Our correspondence runs over the face of the earth, and what will do in New Zealand will not answer in the Isle of Skye or in the Island of Ceylon.]

LENGTH OF PIPE FOR HEATING.—GROWING AGERATUMS.

"How many feet of four-inch piping are necessary to heat a stove twenty-four feet long, twelve feet wide, and eleven feet high, to 70° in all weathers, span-roof? Also, how many feet of four-inch pipe will be required for a greenhouse of the same size?

"X. Y. Z. finds some difficulty in wintering *Ageratums*. He has tried them in pits, with *Verbenas*, &c., where they damp off, though the *Verbenas* succeed well, and also in the warmest end of the greenhouse, where they seem to shrivel

and turn 'white.' The plants, in both cases, were cuttings taken off seedling plants, and were in perfect health at the beginning of the winter. Is there any peculiarity in the soil they require?"

[For the first house you would require nearly 220 feet to be perfectly secure without covering, &c.; but many would risk it with 150 feet. For the second house, from 100 to 110 feet would do. You do not speak of your proposed arrangements; yet something would depend upon them.

The *Ageratum* is more tender than the *Verbena*. We imagine the plants were chilled in the pits before being brought to the greenhouse. We have had no difficulty with them in a cool house seldom below 35°. Sandy loam suits them well.]

HEATING A VINERY BY HOT WATER.—FERN RAISED FROM OLD SPORES.

"I purpose building a Vinery, a lean-to, seventy-five feet long by twelve feet wide in the clear, which will give me a rafter of fifteen feet: do you consider that a proper length? How many rows of four-inch pipes shall I require to heat it for early forcing? What boiler would you recommend as the most economical and effective? Some tell me the saddle, others the tubular boiler is best. Which is most lasting, the cast-iron tubular or wrought-iron saddle boiler? What weight of coke will each consume in a week to keep the house, say at 65° at night, and 75° in the day, unaided by solar heat, when the temperature in a cold greenhouse is at 32°? In what time will each of these boilers raise the temperature in the house, say 33°, or from 32° to 65°?

"Will you tell me the name of the inclosed Fern? I have raised it from seed after the frond had remained in a book for years. I believe it came from India. An answer to the above will greatly oblige—A VERY OLD SUBSCRIBER."

[Your house will be of good size. For moderately early forcing you would want three rows of pipe; for very early four would heat well. All boilers act well in proportion as they are well set, and expose a large surface to the action of the fire. On this account we prefer Thompson's oblong retort tubular and Weeks' upright tubular to any mere modification of the saddle boiler. We rather prefer cast iron to wrought iron, though we have had both that have done work equally well. We have had few casualties with boilers of any kind, though we have seen cast iron cracking, and the rivetings of wrought iron giving way. The less water the boiler holds, and the larger the surface it presents to the fire, the more powerful will be its action. Our memoranda do not enable us to answer your other definite inquiries as to the precise consumption of fuel, &c., and even if they did we should only mislead you, for all these matters vary with the weather and the state of the atmosphere. Do not expect that any boiler will give you heat to force such a house early, and cost "a mere nothing," as is often said, for fuel.

The Fern proves to be *Doodia aspera*, and the very first-rate authority to whom we submitted it adds this note:—"The little frond is rather peculiar in having very short sori, but as the plant gets stronger it will, no doubt, assume the characteristic oblong sori of *Doodia*. I cannot say I have raised Ferns from old spores; I am rather sceptical on this point. If living plants of *Doodia aspera* are in the garden, or neighbourhood, I should infer that the seedling was from recent spores, which, floating in the air, vegetate when they alight on a favourable spot." "A VERY OLD SUBSCRIBER" will oblige us by any information on this point.]

PEACH-TREE PRUNING.

"You have had several articles on the Peach-tree pruning, and I think you will find the first plan spoken of, how people spoil trees fresh from the nursery, does not agree with your after remarks. Again, your illustrations would not assist a novice.

"When a tree comes from the nursery it has only straight branches. Are these to be shortened? The next year it makes side-shoots. The young hand who wishes to learn from what you have said on the subject could not tell how

to prune these side-shoots. Are they to be left as they are, or to be shortened? and what is the rule? Also, the next year gives another side-shoot. Is the year-before's wood to be cut away, or how much of it, to make room for new wood? or what rule is generally the best? Give three illustrations:—1st year, straight shoots; 2nd year, side ditto; 3rd ditto.

"Make some observations in your paper for gardeners to advertise, say some new Pines (trees) they may have plenty of, and the price. The same remark is good to any particular shrub people are looking after. Take a shrub, say *Garrya elliptica*, or even the common *Laurestinus*—how difficult it is to get large specimens!"—T. A. LOXLEY.

[R. Errington is sorry and surprised that this gentleman cannot discover the secrets of Peach pruning, so much having been said. The fact is there is no occasion for much fuss about it. Trees have been repeatedly seen bearing better crops, badly pruned, than those which had received the most scientific knifing. This, however, does not prove that pruning is quite immaterial, but that it is not the "key-stone" of the arch. Young Peach trees, as soon as they have grown one year from the bud, are termed "maidens." They have one straight shoot, with generally a few side-spray. Below this latter are generally four or five dominant side-buds which have never sprouted, and the pruning knife is generally entered immediately above these. In the second year the tree sprouts from three to five shoots, according to its power, and these are pruned back in the rest season for a double reason—to remove ill-ripened portions, and to cause the tree to branch more, in order to cover the wall. Henceforth the thing gradually assumes the character of a fruit question rather than one about wood, and the business is, that whilst every regard is paid to the bearing wood, attention is also given to a proper succession of wood shoots.]

To say all that could be said in close detail would be to make a book; and, indeed, from its prolixity, would be doubtless somewhat tedious to a great portion of the more advanced readers of THE COTTAGE GARDENER.

Mr. L. inquires thus: "What rule is generally the best?" There is no rule for cutting Peach trees except in the hand of a town "jobbing gardener." We have to do with principles; after knowing these, a gardener of any sense cares little for rules—they seem a bother to him. Only suppose that a writer in THE COTTAGE GARDENER were to recommend a rule—say shorten every shoot one-fifth its length. This, although tolerable advice for Kent or Devon, would be infamous advice for the north of Yorkshire.]

TREATMENT OF A YOUNG PASSION-FLOWER AND MAGNOLIA GRANDIFLORA.

"Will you please inform me how to treat a *Passiflora cærulea* which I had from a nursery last spring in a pot, and planted against my house, aspect south-east? It made one shoot of about nine feet, and another of about six feet. As these, with the main stem of the plant, are very slender, I wish to know if I had better prune it back, and how far, with such directions for future treatment as your space will afford. Will it hurt a young *Magnolia grandiflora* to remove it at this season? and will the proposed aspect (south-east, exposed) suit it?"—W. F. B., Redland.

[All right, and no time lost. Your blue Passion-Flower made a famous start the first year, and this next summer it will grow three times as much, if not four times; but that will depend on your own earnestness to insure so much success. You say the nine-feet and six-feet growths are too slender. Too slender for what? But you are right, without finishing the sentence. All the growths are yet too slender to form a sound bottom or body for a useful climber; and here is just where most people fail in getting good *Glycines*, good *Passion-Flowers*, and good *Climbing Roses*: they cut ever so far from the bottom unwittingly, thinking all the time that they are gaining so much time, whereas they are doing exactly the reverse; they leave slender growths at such and such lengths, which hinder the plant from developing its native vigour. The six-feet growth ought to be reduced to the very last pair of eyes next to the nine-feet shoot, or say, out of six feet cut off five feet six inches, and if you finish but one quarter of an inch we would not insure your

success. The nine-feet shoot ought to be cut back to eighteen inches from where it began to grow last year. All should be done about the last week in April, but an old Passion-Flower might be cut a month sooner. Then, next summer, have the surface round the plant formed into a cup to hold water, and from the end of May to the end of August see that, whether it rains or shines, the plant does not go more than four days without artificial watering with a very weak liquid manure; and, during the whole season, let nobody else touch, hurt, or cut one single leaf, or shoot, or tendril it makes the whole season, and as fast as they grow nail them upright, not sideways, this summer, as they will all be fearfully cut back again; but we must hear the state of the plant again before we can say how low to cut them.]

WINTER AND SPRING GARDENING OUT OF DOORS.

"I feel obliged by your kind notice of my query about 'Winter and Spring Gardening out of doors,' but I fear I did not make myself quite understood. I meant that on (say) the 1st of April all the evergreens should be removed from the flower-beds, and gay bloomers, like Daisies, Pansies, Wallflowers, Stocks, &c., should succeed them during the whole of that month and May, until 'bedding out' commences in June in their stead. I never intended to mix bloomers with evergreens; it would not be in good taste."—NEW SUBSCRIBER.

[Your plan would do very well where a few beds only were to be so treated; but there are so very few things for the kind of bedding you want, that the plan cannot be much adopted. We planted a large bed this week with *Doronicum Austriacum*, to bloom for six weeks from the latter end of March. The *variegated Alyssum* makes a nice bed late in April, and *Cheiranthus Marshalli* is another yellow bedder to succeed the Alyssum. Hyacinths and early and double Tulips come in after the middle of April. *Aubrietia purpurea* is a nice mass in April; and border *Anemones*, with Turban *Ranunculus*, double white *Wood Anemone*, and almost all the Californian annuals, sown in September, come in for May. None of these, however, or of any others, will do to be forwarded by any manner of nursing, or forcing, or keeping under glass, so as to come in earlier than is natural to them, as the cold east winds would nip them as soon as they were exposed.]

SCARLET GERANIUMS FOR A SMALL BED AND PILLAR.

"Oblige by telling me the best Scarlet Geranium for a circular bed of three feet radius; also the best Scarlet Geranium for a pillar after the fashion of Rose pillars."—A BEGINNER.

[*Tom Thumb* is the best scarlet for your bed, and *Shrubland Scarlet*, alias *Smith's Emperor*, the best for pillars. They have them eighteen feet high out on the grass against poles at the late Bishop of London's garden at Fulham. If you look at the indexes of former volumes for Geraniums you will see abundance of notes about all sorts of Geraniums; but the above are the best two for you.]

USING AN EXHAUSTED HOTBED.

"T. S. A. has a two-light box standing on an old Cucumber bed of last summer; he does not mean to have a hotbed this year, nor for the present to use the manure of his old bed. The soil on it is almost entirely leaf mould, and fine Cucumbers he grew there last year (one of Crawshay's *Ne Plus Ultra*, 27½ inches in length). What can he do with his lights upon the present bed? Early Potatoes? and if so, what description and name? He has the stiff mould of his old Melon bed to mix with the leaf mould if requisite."

[The *Early Frame* or the *Ash-leaved Kidney* will be the best. The leaf mould will be too rich by itself. Make it half-and-half of the Melon soil. Without more protection than the glass you will get the Potatoes a few weeks earlier. If we had a few barrowsful of good fresh dung we would

have removed the soil and a foot of the old dung, worked up the fresh with the remainder, replaced the old, then the soil, and we would have had a little bottom heat.]

EVERGREEN FOR A SCREEN.

"M. W. TUNBRIDGENSIS" requests advice regarding a screen to intercept the overlooking of her premises from a neighbouring house, both standing in their own little ornamental grounds. It would be planted on an artificial mound, the subsoil of which is sand, projecting from a belt. A single evergreen of the *Cedrus* or *Abies* genus would be preferred; or any other Fir of free-growing, spreading habit."

[A couple of Spruce Firs about seven or eight feet high would be cheapest, or say three trees of that size to make a "block" at once, and two of them to be removed after a while. But if "M. W. TUNBRIDGENSIS" is likely to hold the pretty "little garden" for a number of years, Spruce, or Scotch, or Silver Firs are far too commonplace things for so choice a morsel, and we would advise one *Pinus insignis*, at 7s. 6d. or 10s., to be planted with one or two Spruce trees, to do till the *insignis* did it all itself. There is not a faster growing or a better screen tree among all the Conifers of that class; it is a wonderfully bushy, close, and rapid-growing tree, and is the best green of them all; the only drawback is the price, which is about 6s. a yard.

TO CORRESPONDENTS.

FLOWER-GARDEN PLAN (Greenhorn).—*Salvia patens* will do to be sown now, and 10 and 12 are the two beds for the seedlings. Older plants would need to be trained or pegged down there. 11 must be all variegated plants, or *Heliotropes* with a white edging. The meaning is to keep the glaring colours from the centre beds. Scarlet Geraniums in 1 and 3; the whole of 2 to be yellow; and 20, the match bed, to be of all shades of yellow, and an edging of *Golden Chain* if you had it, but *Eurotia prostrata* will do. 19 and 21 mixed purple Petunias, edged with Robinson's *Defiance*, and for the rest anything you can lay your hands on. All manner of Verbenas; *Sanvitalia procumbens*, from seeds at the end of March; *Saponaria Calabrica*, ditto; *Tagetes tenuifolia*, ditto; the three last out the season. Then all sorts of odds and ends, Clarkias, Nemophilas, to be followed by China Asters sown on the 10th of May. One thing is quite certain—if you once get into the careless habit of filling all the beds at once for the season you will be a "greenhorn" to the end of your days.

ILLUSTRATED GARDEN WORK (R. H.).—The second volume of the COTTAGE GARDENER'S DICTIONARY, which will appear in the course of a few weeks, will answer your purpose.

BETTER ON VINE BUDS (J. L.).—The beetle is the weevil, *Otiorynchus scabrosus*, a beetle very destructive to young buds. It feeds by night, and may be easily trapped by laying a cloth beneath the branches by day, and then shaking them about midnight, when the insects are taking their meal. They may be destroyed by sweeping them off the cloth into boiling water.—W.

HYACINTH CULTURE (A Subscriber).—When done blooming take the bulbs carefully out of the water, and plant them in the borders without injuring the roots or leaves, but they will not bloom next year. A manual on "Florists' Flowers" will be published in a few days, which will give you full information. Inarching *Camellias* is done just as inarching any other hard-wooded shrub.

PAINTERS' OIL REFUSE (J. B.).—Spread it over any space in your kitchen garden requiring manure, and dig it in. Oil in any form is a powerful fertiliser. We should apply it to the Cabbage tribe, Rhubarb, and Asparagus. We conclude there is no white lead or other mineral poison in the refuse. If there is, we cannot say how far that might injure plants.

CAMELLIA SOIL (J. W.).—No wonder that your *Camellias* do not thrive in a soil "all peat." They require a mixture of half strong, turfy loam, and half sandy peat. We do not know where Mr. Alexander bought his Chinese Primrose seed.

VARIEGATED HYDRANGEA.—SCARLET FLOWERS FOR A CONSERVATORY, &c. (L. J.).—1. The variegated *Hydrangea* blooms, but the leaves are the best of it. It will look best in a warm house, but it will not bloom so well as in a greenhouse. It should be grown chiefly for the foliage. 2. You do not say what kind of Scarlets you want for a moderately warm conservatory. *Salvia splendens* and *fulgens*, to be followed by *Gesneræfolia*, are showy, and then for hard-wooded plants the red, and scarlet, and crimson *Epacris*. 3. Most likely your *Magnolia* would do as well out of doors. Some are long in blooming. Perhaps you had better send a leaf.

SOWING SEEDS FOR A COOL GREENHOUSE (J. R.).—The reason why such kinds of *Acacia* as *Drummondii* and *grandis* are not mentioned in Mr. Carter's very excellent Catalogue we presume to be that seeds are not yet quite plentiful in the trade. *Acacias* would answer well for such a house, and of these *armata*, *falciformis*, *glauca*, *hispidula*, *juniperina*, *longifolia*, *lophantha*, *pulchella*, and *speciosa*, would suit you best. These should all be sown in a hotbed, and if the seeds are steeped a few hours in warm water before sowing they will vegetate

all the sooner. If the seed should happen to be very old the hot water may accelerate the rotting, when a few might come by allowing them to absorb moisture gradually from dryish soil. Next to these we would, among hard-wooded plants, select *Chianthus puniceus*, *Coronilla glauca*, *Crotalaria Capensis* and *latifolia*, *Dolichos lignosus* as a climber, *Grevilleas* and *Proteas* of species, *Metrosideros lanceolatus*, *Hermannia Africana*, *Sutherlandia frutescens*. These will also come better if sown in a gentle hotbed. A good plan would be to fill the pots half full of drainage, then some rough soil, then finer, finishing by leaving an inch unoccupied from the rim of the pot. When the seeds are sown place a square of glass over the pot. This will prevent accidents to the seeds, and permit, by giving air by tilting up the square of glass, a gradual hardening off of the young plants before potting off. These will do, though frequently in a temperature of 35°. The following should seldom be below 40°, with a rise of a few degrees in cloudy days, and of 10° or 15° in bright days in winter:—*Bossia ensata*, *linophylla*, *scolopendrium*, *Callistachys ovata*, *retusa*, *Chorozema varia* and others, *Daviesia acicularis*, *Diosma oppositifolia*, *Ericas* of species, *Horea rosmarinifolia*, *Indigofera linifolia*, *viscosa*, *atro-purpurea*, *Kennedy Marryatta*, *Baummannii*, *rubicunda*, *Comptoniana*, *Oxylobium* of kinds, *Lotus Jacobæus*, *Persoonia linearis*, *Pinelea decussata*, *Hendersonii*, *spectabilis*, *Podalyria sericea*, *Psoralea pinnata*, *Sollya linearis*, *Swainsonia galegifolia*, *Virgilia Capensis*. For summer and autumn blooming soft-wooded plants, sow *Calceolarias* in a cool place, *Cinerarias* in a little heat, *Browallias*, *Balsams*, and *Cockscombs* in a hotbed, *Thunbergias* ditto, *Mimulus*, *Petunias*, and *Primulas* in a little heat, with a glass over them.

TANK versus PIPES (J. R.).—In your case we would prefer the tank, if not much more expensive, though if you have plenty of pipes we have no doubt they will answer equally well. Change your three quarters of an inch connecting pipe into one of two inches. When your boiler is within one foot of the tank we would have had iron as the connecting medium. Are you sure your flow pipe and return are properly placed? We never care about having the water too hot, but we should look out for something wrong if the water was heard galloping in the boiler, and the water in the pipes or tank comparatively cool: 150°, however, is pretty fair, unless when a great heat is wanted, and then we would prefer increasing the heating surface.

MESEMBRYANTHEMUMS.—A New Subscriber wants to know their treatment, and asks, 1st. "Is it an annual?" 2nd. When should it be sown for bedding purposes? And 3rd. Does it require to be sown in a hotbed?" We should have liked, before noticing this very pithy inquiry, to have spent some days during the summer at the Botanic Gardens at Oxford or Kew. We once had the pleasure of seeing a fine collection at the former place, and Mr. Baxter, the very able and courteous curator there, could very easily help us out of a scrape by giving us a good list for the greenhouse, the window, and the flower garden. We write this chiefly in the hope of having deficiencies supplemented. First, then, there are *Mesembryanthemums* that are annuals, and others that are not annuals, though all of the smaller-growing kinds may be treated as annuals; for, if sown in a mild hotbed in the beginning of March, and pricked out when large enough, and gradually hardened off, they will bloom the same summer and autumn. Where there is no hotbed they may be raised in a warmish room by sowing the seeds in sandy soil in pots, covering them slightly with sand, and placing a pane of glass over the pot, and transferring the pots to the window as the seedlings appear. If the soil in the pots was watered a day before the seeds were sown the seedlings will hardly require any water until they are pricked off. They may be moved at first in little patches about one inch apart; and if the room or house is very airy a pane of glass may be laid over the pot again, and, in that case, the soil should be nearly one inch below the rim. Harden off by degrees, by giving air on one side before finally removing the glass. Of annuals the best known is *crystallinum*, the Ice plant. Of these *glabrum*, *calendulaceum*, *Californicum*, *pomeridianum*, *helianthoides*, *pyropæum*, and *caducum*, are, perhaps, the most showy. None that we are aware of will stand frost; and, therefore, all out of doors will share the fate of half-hardy annuals. The following, though not properly speaking annuals, when kept in-doors will bloom profusely if sown, as above mentioned, in a hotbed or warm room, and planted out in the end of May, and are frequently marked as half-hardy annuals in nurserymen's catalogues:—*Aloides*, yellow; *aureum*, golden; *blandum*, white; *capitatum*, pale yellow; *crassuloides*, pink; *flavum*, yellow; *lanceolatum*, white; *moniliforme*, white; *roseum*, *tricolor*, three-coloured. The average height of the above will be about six inches. The following have more of a trailing habit:—*Calycinum*, white; *densum*, pink; *rubricaulis*, *sarmentosum*, *virgatum*, &c. These and the above propagate very freely from cuttings, allowing the end of the cuttings to dry for a day or two before inserting them in silver sand. When the *Mesembryanthemums* are planted out of doors a very sunny, warm spot should be chosen, and the more elevated and dry the position, the better and the longer will the plants bloom. They are just in their glory in a rockwork facing the sun. It is no use planting them in very rich soil, or keeping them in a shady place.

COVERING VINE BORDERS.—VINES NOT PROSPERING (J. H. B.).—You found Vines in flower last March that had been forced in February. Borders from three to four feet deep, with leaves and dung doing duty as a hotbed for Lettuce. The fruit was not well flavoured, the leaves of the *Sweetwater* were pale green and spotted—no insects seen—and the wood did not ripen. Vines are planted inside in a two-foot border, and go out. Soil the richest possible. It is now sodden; has few roots near the surface, and, though top dressed with leaf mould and sheep-dung, and though covered with leaves and manure, watched so as not to be too hot, and though a moist temperature is kept inside, the Vines will not break regularly; and those that break do not show fruit. You fancy the rank soil has now been partially exhausted, or the Vines were forced too speedily last spring, and exhausted the stems before there was root action, &c.

Very probably there may be something in your surmisings; but still we do not see that the cause lies there so much. If there was a deficiency of root action it would have shown itself when the Vines were in flower more than any other time. We know not when the covering was put on; but we should fear that there was too much. Why, such a height of

fermenting manure would have forced Cucumbers at Christmas! If, however, it was cool enough for Lettuces, we should fancy it was not too hot for Vines. The appearance your *Sweetwaters* presented would lead to the idea either that the roots were burned or enervated by too much heat. When the roots are near the surface, and forcing is commenced early, we approve of a little heat in the border, say from 60° to 70°, and the border to be gently heated before forcing commences inside; but half of the material will do that which you speak of. When the roots are deep, say two feet in general, the exclusion of frost will be sufficient. The want of having the wood ripened last autumn is the great cause of your disappointment this season. If the wood is not matured and hardened the buds will yield shoots without fruit. We do not know what means you took to ripen the wood, and failed; but this should have been a matter of importance. The soaked and sodden condition of the border is much against you, and, by drainage and coverings to throw off the water, this should have been avoided. If the description of the rich material of the border is correct, then we have little faith in dung or leaves half decayed being added to it. Working in a lot of sandy loam, and old lime rubbish, and broken bricks will do it more good. It is always against early forcing to commence with a wet border, and some cheap contrivance must be used to prevent it. The Vines you mention have all of them their admirers; but we do not know *Akbar Khan*, nor yet the *White Lombardy*, unless it be identical with the *White Hamburgh* or the *Portugal*. The *West's St. Peter's* will not, in general, break so soon as the *Hamburgh*. If we do not meet the case entirely write again. If your border is so wet you had better at once dig a deep drain in front of it, and even make holes in it. We are reluctant to say more unless we knew more.

VARIOUS (M. F.)—*Impatiens Jerdonia*. Whenever this gives signs of going to rest by casting its flowers and leaves, let it gradually become drier, and keep it in a temperature of from 45° to 55°. As soon as it begins to break increase the temperature, and also the watering. It will then rejoice in a temperature of from 60° to 70°. When the young shoots are an inch in length they strike freely placed in sandy soil, under a bell-glass, in a hotbed. As the plant is going to rest, little tit bits, like pseudo-bulbs or Orchids, often cluster near the collar of the plant, and these, treated as cuttings in heat, will soon make nice plants. Open, rich soil suits it well. When resting, the roots must not be quite dry.—*Desfontainia spinosa*. This is propagated by small pieces of the young shoots getting a little firm at the base, inserted in sand under a bell-glass, and treated with a close place and a little extra heat to a greenhouse. It grows freely in peat and loam. You have treated it quite right, and until you get a shrub we would advise keeping it in the greenhouse, though strong plants may alternately do very well in good situations out of doors. See a memorandum of it in No. 322.—*Eugenia Ugni*. This is just as easily propagated and grown as a Myrtle. Little pieces of young wood getting firm at their base strike freely under a bell-glass in sandy soil, or even in a shady place, under a handlight, in summer. Free loam grows it well; and as it fruits in a young state it is likely to be in demand. We have seen quantities of it killed not far north of London, and would advise you to treat your plant as a hardy greenhouse one until it was well established, and you had got more of it, when it might go against a south wall.

MOVING A CONIFER EIGHTEEN FEET HIGH (A. J.).—Your tree can be moved, but it should be by some experienced person. In the first place, a good hole should be made ready to receive it some two feet deep and five feet in diameter. If the natural soil be not a favourable one it should be made so by bringing in good soil and taking away the bad; then take up the turf round the tree some six feet all round, carefully putting it away; then commence opening a deep trench some two feet and a half to three feet all round from the trunk of the tree; continue this until you have worked right under the tree so as to secure good roots and a good ball of earth with them; then, with plenty of strength, move it with much care not to injure the roots. Move it with as much earth as possible to its new situation, and as soon as planted devise some good method of staking it at once, to prevent the wind blowing it about; then the hole on the lawn should be solidly filled up, and the turf all made good, and it will take no hurt. From the little bit sent we judge it to be the common upright Cedar, *Cupressus sempervirens*.

PLANTING FLOWER-GARDEN PLAN (J. Milne).—We never do what you require; and we could not plant your design on the geometric system, because it is drawn on a wrong principle; the corresponding ends are cut off from the centre by two-foot borders across the plan. The plan is too small to have these two cross borders in grass, and if they are filled with flowers they will spoil the whole effect of a very pretty garden.

PRIMULA SINENSIS (Amateur).—Of *Primula Sinensis marginata* the flower should be of good substance, round, and prettily notched or fringed round the margin of the corolla. It should be called *fimbriata* instead of *marginata*. *P. Nepalensis* we know nothing about. Your *Hovea* is *Hovea rosmarinifolia*.

NAMES OF PLANTS, &c. (A Kentish Subscriber).—The specimens are too small for us to detect any but *Oxalis versicolor* (white and red). Why did you not number the specimens? You may report now your *Cypripedium insigne*. (James Lawson).—Your Fern is *Adiantum pubescens*, and not uncommon.

THE POULTRY CHRONICLE.

A PLEA FOR BANTAMS.

THE four chief classes of these lovely and useful little things are Black, White, Laced, and Game. The *Black* are the hardiest and best winter layers; the *White* the most ornamental; the *Laced* the most showy; and the *Game* the best sitters and the finest. My remarks upon them will be

divided into four heads, namely, *Usefulness, Beauty, Characteristics, and Points in the Breeds*. Relative to the first point, Bantams require very little food. I have always found my Bantams thrive on one pint of barley for seven per diem. Well, this grain would only serve about a couple of great voracious Cochins, and they would even then require more. My Bantams, after eating this food in the morning, forage for themselves all the rest of the day. Then I find that Bantams will lay as regularly as other fowls, on an average, five eggs per week; and the eggs really were of a tolerable size—three formed an ample breakfast. They take up little room, too—a very little shed, warm and water-tight, holds them; and a yard nine feet square afforded twelve Bantams ample exercise; at least, though they might have had a large run if they chose, they never tried it.

Then Bantams are splendid sitters and mothers. I have hens that have hatched thirteen eggs thrice a year; and, to sum up, their food for seven costs about 6½d. per week.

Now for their *Beauty*; yet what need I say? In the country, where they have a nice green lawn to contrast with their feathers, what fowls are lovelier than White Bantams? In smoky London what fowls are prettier than Black Bantams? In the lady's pet poultry-yard what fowls harmonise better with beautiful structures than Gold-laced or Silver-laced Bantams? and, in the little poultry-yard, what fowls look prouder or more beautiful than the haughty Game Bantam cock and his half dozen handsome, symmetrical hens? None.

I have something more to say; and now for their *Characteristic Points in Breeding*. The chief points in the *Black Bantams* are perfect absence of coloured feathers in plumage (red feathers a dreadful fault), erect carriage, head nearly touching the tail in cock, large comb and wattles, black legs, wings carried jauntily, and tiny size.

White Bantams should have pure white plumage, erect gait, good comb and tail, short legs, small head, and weigh not more than 1 lb. in the cock, and ¾ lb. in the hens.

The *Gold* and *Silver-laced* should have the ground colour of the plumage yellow or silver, as the case may be, and the feathers should be tipped all round the edges with a thin black rim. Some Laced Bantams, however, have merely the tip of the feather touched with black. Their legs should be blue, toe-nails white; and they should have square tails with no sickle feathers, and red, thick rose-combs. The wings should droop till they brush the ground, and the bird should strut proudly.

Game Bantams should be Game fowls in miniature, and should be dubbed and have a short beak, long neck, heart-shaped body, and a fine arched tail, with long, curved feathers. The fine flowing tail is a great point in this breed. Duck-wings and Black-breasted Reds fetch the most money—of course they must be of tiny size.

I must apologise for trespassing on the space of your delightful paper; but I hope you will insert these remarks, as I have a great wish to see the "Bantams" discussed in your pages; and that you will insert this, and that Bantams may flourish, is the sincere wish of—A WILTSHIRE POULTRY KEEPER.

[Pray trespass thus very often.—ED. C. G.]

THE SINGLE COCHIN-CHINA COCK CLASS AT LIVERPOOL

If exhibitors will call in question the decision of the Judges (a hazardous, if not a very futile experiment on most occasions) they should at least be sure of their premises in doing so, otherwise the charge recoils upon themselves, the fallacy is laid bare, and pique and disappointment stand convicted.

Your correspondent, "CONSISTENCY," writing assuredly under a misnomer, does not seem to understand that class C at the Liverpool Exhibition was a class for single Cochin cocks of all colours. He imagines, if we may judge from his observations, that it was a class for the competition of Partridge Cochin cocks strictly so called; and, under this impression, he contrasts disparagingly pen 323, a very old Partridge cock, who had the honour to be "highly commended," with pen 325, "a remarkably fine cockerel, to

whom the same two Judges, at the last Birmingham Show, gave the Silver Cup *and all the honours in their power*," but from whom, on this occasion, he neither received honour nor commendation, nor notice of any kind!

"CONSISTENCY" acknowledges that the shape of the old bird was very good; that he was short in leg and well feathered; body large and well formed; and, indeed, generally correct in all points; but his colour *VILE, a rusty dead brown, with patches of brown feathers over all the breast, thighs, and rump*; whereas the Silver Cup bird had breast, thighs, legs, and rump perfectly black. He then angrily appeals to the Judges, and asks what are to be the characteristics of Partridge cocks. "Is it not necessary to have the bright plumage, black breast, thighs, and legs so long coveted? and are we, against the next gathering at Birmingham, to prepare for competition only such *nondescripts* as the bird highly commended at Liverpool?"

Now, admitting a little reasonable disappointment on the part of any one who had bought an extravagant-priced bird on finding him unnoticed on his first exhibition, one cannot but be astonished at such an attack upon the Judges in reference to colour, and the distinction of *Partridge* cocks in a matter where colour had nothing to do with it, and where their decision was not in reference to *Partridge* cocks, but to *Cochin* cocks of all colours; in fact, what they had to decide upon, if my notions are correct, was to award honours to those birds which were the best models of what a *Cochin-China* ought to be; and in this view, although the handsome young cockerel came in full figure, with black trousers and dress boots, and the old one in his travelling costume of *mahogany tops, spurs, and brown buckskin inexpressibles*, nevertheless the Judges honoured the latter as the better specimen of a *Cochin*; and, *Va! Mihi!* ignored the Silver Cup bird altogether!

With an especial reservation of his own name, your correspondent drags forward that of the owner of the old bird, comments on his proceedings, and complacently assumes, "I may notice, also, that his owner was equally astonished with myself at the notice taken of him by the Judges, having stated to a friend of my own that he would willingly have taken twenty shillings for him the previous day—a remark soon to be realised; for though he was entered in the catalogue to be sold for £20, this was reduced by Mr. P. Cartwright, the owner, to £3 within two hours of the opening of the Exhibition; and, finding no buyer even at this reduction, he was finally sold by Messrs. Lucas and Co., after the utmost efforts of those gentlemen in parading the high honours awarded to him in the Exhibition from two of the ablest Judges in the land, for a nett sum to his owner of less than twenty shillings."

Now, Sir, I really did chuckle to see the old bird snatch a commendation from some of the valuable birds that surrounded him, and stated to an exhibitor that I had sent him purposely for sale on account of his age, and should be content to get £1 for him.

But your correspondent makes an erroneous deduction if, on this account, he supposes I did not estimate his merits as a *Cochin* cock as highly as the Judges did. It would have been very ungracious not to do so; and I think that even our gentle critic, *under similar circumstances*, would not have been so prompt to call their judgment in question.

In the lottery of chances "CONSISTENCY" must expect to find occasionally, as in this instance, that the highest-priced birds do not always win, and that those of insignificant value may now and then have a prize adjudicated to them; and he ought to have known, both according to Cocker and the usual law of Exhibitions, that I had as much right to affix the unsaleable price of £20 to my bird of £1 value as he had to affix the unsaleable price of £100 for a bird that might be valued at the fancy price of £5.

Again, as to colour (*nimum ne crede colori*), vile as is that of this old *nondescript*, if his antecedents are a criterion, he is quite as likely to beget the much-coveted black breast, pluff, legs, and stern for the next Birmingham gathering as his more genteel and high-priced competitor. He is the sire of the first prize pen at Anerley in 1855, from which a celebrated amateur has bred many winners; and some of his produce of the past year have been in a prize pen at Prescott, and in the Silver Cup pen at Preston; and I do not doubt if, during the ensuing year, the produce of pen 323

should meet the produce of pen 325, they will amply vindicate the honour of their sire.

It may tend to smooth over some asperities, and to modify "CONSISTENCY'S" unmerited censure of those who acted as Judges, to mention that the old Partridge cock came to me with the assurance, from a highly respectable gentleman, that the author of "The Poultry Book" (no mean authority) had once declared him to be as good a specimen of what a *Cochin* cock ought to be as he had ever seen.—THE LATE OWNER OF THE COCK AT LIVERPOOL, PEN 323.

EACH LOCALITY HAS A FOWL MOST BEFITTING IT.

YOUR correspondent, "SILVER-PENCILLED HAMBURGH," has again obliged your poultry-loving subscribers by detailing the management and produce of his birds in 1856. I think we are all indebted to him for his information. I think his return of 774 eggs from four hens, an average of 193 per head, is the largest average ever published. None will deny him a right to plume himself upon such success. I, if no one else, must ask why he "throws down the gauntlet" to "FELIX RABBIT," against whom, he tells us, he "draws out his forces in battle array."

I suspect Rabbits, as a family, will never be found so ready to wage war as the clamorous and restless race whom your correspondent so characteristically impersonates. "FELIX" comes of a patient, peaceful stock, cheerily picking up a sufficient sustenance where more ambitious animals would pine and starve. I do not think my friend would have shown fight had he been in England. I am sure I cannot see any reason why he should. Poor "FELIX" was profoundly indifferent to "fame" and "laurels." He kept fowls because he wanted eggs. He kept *Cochins* because they suited him, and did not interfere with his neighbours. There were no complaints of trespass to soothe down, no rousy birds to cure, and, as he never retained a cock with "his horrid howl," no wakeful person could allege a nuisance. He read in your pages that people situated like himself might get winter eggs cheaper than the market would supply them by keeping *Cochin* pullets from September to March. He tried the plan and succeeded. He told the little world so—that great world rather, whose fate it is to have many burdens and few pleasures, and to be penned up in the outskirts of towns, in "Spring Gardens" where there is neither water nor verdure, and in "Prospect Places" where there is nothing to see.

The time came when even this scanty approach to a home was more than he could maintain for his ever-increasing family. Like *Hamburgh* birds they would not thrive "cabined, cribbed, confined." They wanted a larger run, so he and they are off to New Zealand. I hope he will read there that his old competitor has challenged him once more, and that his successor in the little box where *Cochins* flourished under his superintendence has, among the many small matters left to his care, not forgotten to uphold in poultry controversy the report of his predecessor.

In truth, on what point are "FELIX" and your correspondent of February 17th to join issue? The first made a report which I know would be both careful and accurate; the second makes his statement, which I have no doubt is as careful and as accurate a one. They are in no respects contradictory. They are parallel passages rather than antagonistic assertions. What is there to fight about?

"SILVER-PENCILLED HAMBURGH," in 1856, keeps fowls of his kind under most favourable circumstances for any variety, and gets 774 eggs from four hens in a year. He got in the dear time (between Sept. 1st and March 1st) 242 eggs. In the days of plenty he got 532. "FELIX," under circumstances which made *Cochins* the only variety possible, got 599 eggs in the twelve months, 289 in the winter, and 310 in the summer half year. He hatched, besides, three or four broods for his friends. What great superiority is established for one variety over the other? "FELIX" greater supply in winter (the winter of 1855, too, the worst ever known) almost counterbalances "HAMBURGH'S" larger summer return. The circumstances are too different to admit of accurate comparison of breed with breed. I do not believe any of our established

breeds will ever supersede or be superseded by a rival race. Each in its fit locality is best. Useful competition is that between different strains of the same variety, or between different varieties under identical circumstances. I believe the valuable points of every variety may be considerably improved by careful breeding. To this should poultry amateurs give their attention. To vaunt one breed at the expense of another is unprofitable employment. For myself I am a keen admirer of the pretty birds championed so pleasantly by your friend of the Silver-pencil. When I have "a good grass field and a carriage-drive" to give them I shall endeavour to keep them. When I do I will ask the Editor of THE COTTAGE GARDENER to insert communication No. 2 from his admirer—SPARROW-HAWK.

GAME FOWLS.

I FIND that I omitted to state a few *requisites* for a good Game fowl. As to feathers, they should be rather *thin* than *thick* of feathers, and those *short, stiff, and hard*, which is a sign of good health; whereas, if *long, silky, and soft*, it is a sign of a weak constitution. Also, that in olive or willow-legged fowls the *ball of the foot* should be *yellow*.

Among imperfections as to colour I may mention *party-coloured breasts* as defective in most varieties, generally from bad crossing.

Among imperfections as to shape there are as follows:—*Short and thick-footed, short-necked, crooked breast-bone* (generally from letting young chicks perch too early while the breast-bone is soft), *too short-legged, thin thighs, hocks turning in too much, flat-sided*, and, consequently, *too deep-heeled*.

I also consider that *Piles*, being of such a variety of crosses and mixtures, should rank *last* instead of *first* in the catalogues of Exhibitions.—NEWMARKET.

PETITION OF THE BUENOS AYREAN DUCK.

MR. EDITOR,—I am a quack, but no charlatan. I am black, but neither a negro, an Asiatic, nor an African. I am a waddler, yet not ungainly either in my person or my shape. I put my appeal in the POULTRY CHRONICLE, yet I am not out of place in THE COTTAGE GARDENER, for many ardent followers of horticulture and floriculture approve my exertions in their gardens. Sir, I am a BUENOS AYREAN DUCK, and I demand justice. How often, Sir, do my fellows devour the slugs and save the early Peas, little dreaming that they will figure on the same table with them! How often does the poultry woman, when the sun shines on our lustrous plumage, say it is a shame to kill us, yet does the deed at the same moment! I do not complain of this; but, at the same time, let me say one word on the manner in which this last operation should be performed. Cut our throats effectually, and have done with it. Oh! Sir, those wretches who profess to kill us with pins have much to answer for. How often they miss their mark, and thrust the pin everywhere but in the brain!

A clever old relation of mine has often told me what he once saw in France. It was at the end of the year, and the *nouvelle année* was to be kept by a large party. My uncle and seven relations were put in a basket by an old woman who had carefully reared them, and they were taken by her to market. They were bought by the cook and taken home. Then there was a committee to choose the fattest to be killed for New Year's day. My uncle had only just recovered from a severe attack of cramp, and that saved his life. He was thin. I now use his own words:—"The others, one after the other, had the pin stuck into their heads, and were taken to the cellar. It was an old, lofty place, and in the centre was a circular iron, garnished with hooks all round. This was raised nearly to the ceiling by a rope and a pulley. A hook was passed through the lower bill of each duck, and they were drawn up. The wretched old cook jokingly said to her mistress they formed a new dish—*les canards en suspens*. I was placed in a basket immediately beneath them on the ground. For a time I envied them; but I was tired, and I went to sleep. A deep sigh and a groan, as of something in pain, awoke me. I hoped I was

dreaming, but I heard it again. It was one of my companions—he had only fainted with the pain. All but one recovered consciousness. What a scene! They naturally tried to fly; the rope allowed a certain play to the iron, and, with flapping wings, rushing wind, and stifled cries, it was frightful. The cellar and larder were close to the kitchen. 'Hark,' said the old cook, 'what is that?' 'I don't know,' said the housemaid, crossing herself. 'Go and see,' said the cook. 'Yes,' said the housemaid, and ran away in an opposite direction. 'Ambroise,' shouted the cook to the gardener, 'come directly.' 'What is it?' said he, looking in at the window. 'Come, come,' said the old cook, pushing him before her towards the cellar. The confusion now brought out the master and mistress, and all approached the door; but the noise of the iron ring working round, the curious cries, and the rushing wind, frightened them all. 'Bring a light,' said the master. A candle was brought and blown out directly. Here one of my companions released himself, and flying among the company dispersed them all. The cook fainted, the mistress went into hysterics, and the master was going for the Commissary of Police, when the released duck gave a plain quack. This ended the mystery, and the brutes laughed while the gardener really killed them." Enough of death.

Let me now speak for myself of what happens in our lives, and let me state my complaint. Why is it that we, who possess every quality that can be valuable in ducks, have not a class to ourselves? We are often as numerously represented as any others, our breed is as pure, we call ourselves black ducks, and we lay black eggs. We are prolific, excellent for the table, and kept throughout the country. It was always understood that when any class became sufficiently numerous it should have one to itself at Exhibitions. We have done so, but remain with the "varieties." We are mixed up with the nasty Muscovies, the inexplicable crosses; the curiosities, such as top-knotted; the monstrosities—I once occupied a pen next to a duck with three legs; the eccentricities, like Penguins; the pretty but noisy Call Ducks, and the sedate-looking Hoop-bills.

Mr. Editor, advocate our claims. I pass over the smallness of the prizes offered for us; I will be content with that; but I contend that we can fill a more numerous, and, consequently, a more remunerating class than either Black or White Cochins or Malays. We do not ask for large pens; and, above all, we do not want a deep one. Let the different Committees offer us prizes, and we will make a good and numerous class. We will show our beautiful metallic plumage to such advantage, that we shall attract spectators. They will thank me for my appeal, and wonder our claims were so long overlooked.—QUACK.

FANCY RABBITS.

I JUST wish to ask "P. B." a few simple questions. Does he (as I suppose from his writing he keeps fancy rabbits) strictly conform, in the keeping of his own rabbits, with the rules which he lays down for others? and has he provided a suitable house fitted up in such a manner as best to afford those comforts and necessities which their habits require? If he has he can, of course, say, and should have said in his letter, that he had tried the plan and found it to succeed, if it did.

Does he know that every animal should be kept as nearly as possible in a state of nature? If he knows it, why does he recommend rabbits to be kept in hay chambers? He would just oppose Nature in this instance by keeping a rabbit in a hay chamber, when its natural propensity is to live in burrows.

Are his hutches on the same plan as that of which a diagram is annexed to his letter? It seems from its appearance to be an expensive one, and the generality of rabbit keepers and breeders do not spend their money in buying hutches, but on the inmates of them, and have successfully bred and kept them in old barrels or tea-chests, which have answered all purposes; and besides, his plan, I have no doubt, will do very well to take them to shows in, but not for them to live generally in. For instance, you have a fine stable fitted up with every convenience; yet you could not judiciously keep

in it a mare and foal excepting in the inclement season of the year.

It is very objectionable to have rabbit hutches one above another in tiers, because the floor of each must be very well fitted, or the moisture will drop through; and, after all, the boards may shrink, and then it would be a great trouble and inconvenience to have to take the floors up and refit them again.

I will just quote a little of "P. B.'s" letter, where he says, "I would earnestly impress upon the mind of the young or inexperienced fancier the great importance of strict cleanliness in the abodes of these animals." How is this, then? He says red deal is the best wood for the floor. Red deal is not a firm wood, and would therefore absorb the moisture, which would decay the wood, and cause a continual stench, which would not in the least agree with rabbits, which are naturally very clean animals.—VIGILANS.

VARIETY 2.—THE GERMAN FEATHER-FOOTED TUMBLER.



THIS variety, which abounds at Coblenz on the Rhine, is rather larger than the foregoing. They are exceedingly gentle and tractable, good breeders, and fly and tumble very nicely. I once kept a considerable flight of them, and can speak from experience that, notwithstanding their size, they would soar and tumble as well as the English birds; but, though they flew lightly and remained long up, yet their flight is not swift, and consequently they are frequently taken by hawks. They are most remarkable for the quantity and length of feathers on the feet. I have had some with feathers six inches long, which stuck out almost like a small pair of wings when the birds flew. The feathers on the feet of all that I have seen were, from the heel or hock to the end of the toes, invariably white. Their chief plumage was black, with white flights and white slippers, as the feathers on the feet are called; others are blue, red, or yellow, with the same white pinions and feet; some also having white tails, and many of the red have nice white beards. I have seen some black mottled, but always with white pinions and feet; but my especial favourites were entirely white, with beautiful pearl eyes.

VARIETY 3.—THE OLD ENGLISH TUMBLER.

These pretty Pigeons are now nearly extinct and rarely to be met with. They were of small size, with good pearl eyes, a short beak, and pretty round head. They flew admirably, tumbled nicely, going over clean once at a throw, not leaving the flight, and soared very high. In colour they were mostly blue, but some black and others white.

OUR LETTER BOX.

BELGIAN CANARIES.—In reply to C. C.'s inquiry of last week respecting the principal points of the Belgian Canaries, I beg to say there are five features. 1st. Thigh long. 2nd. Shoulders high and prominent. 3rd. Carriage erect. 4th. Colour of the deepest yellow. 5th. Body and tail long—the latter indispensable. Birds possessing all the former points without length of tail we consider not up to the mark for prizes. The same applies to the coloured varieties only wanting uniformity of markings.—R. PIKE. [A breeder in this class for twenty years.]

WHITE RABBITS WITH BLACK NOSES, &c.—"At the Crystal Palace Poultry, &c., Show, there was a pair of rabbits, in colour white, with black ears, nose, and feet. Mr. Baker was the exhibitor, and he did not give them any name. In a small work published a year or two ago it is stated that among our small wild rabbits white ones with black extremities are sometimes found. In Leadenhall Market one dealer calls them Egyptian Smuts. At Brentwood a working gardener who has had them styles them Africans, and further down in Essex (where a pair some years ago was purchased from Mr. Baker for £4 4s.), they are said to have come from the mountains of India, and are called 'Himalaya Rabbits;' and about eighteen months ago they were sold, at one of Mr. Stevens' sales, and called in the catalogue 'Himalaya.' But as Mr. Baker sold these rabbits into that part of Essex where they are called 'Himalaya,' it seems strange, if that name is right, in Mr. B. avoiding giving any name to them at the Crystal Palace Show, and only calling them, by a general description, as 'a pair of white rabbits with black extremities.' They have red eyes, showing an unnatural condition of the pigment and its colour cells. Can you favour me with any information of what species (if a species), or variety of rabbit these are?"—CONEY.

[We cannot give any information relative to this variety, and, therefore, shall be much obliged by any that may be sent to us.]

PARROT BITING OFF ITS OWN FEATHERS.—A Subscriber wishes for a remedy for this propensity. It is a common habit, and seems to arise from irritability. We knew a cockatoo which used to pick himself bare, but no remedy could be found. A necklace, such as is put round a horse's neck to prevent him touching a blister, might be effectual as a check, and break the bird of the habit.

LONDON MARKETS.—MARCH 9TH.

COVENT GARDEN

A week's fine weather has improved our supply, and also our trade (for we are proper fine-weather birds in Covent Garden); but we have nothing particular to report. Some new *English Grapes* are to be had, and there is, also, good *Barbarossa* offered for sale, that now fills up a vacuum we experienced in former years between the retarded and the new *Grapes*. Good *Dessert Apples* very scarce. *Potato* trade dull; prices somewhat lower.

FRUIT.

Apples, Ribston, per bush,	8s. ,, 12s.
dessert, do.	12s. ,, 20s.
Pears, each.....	9d. ,, 1s.
Peaches, per doz.	0s. ,, 0s.
Nectarines, do.....	0s. ,, 0s.
Pine-apples, per lb.	8s. ,, 12s.
Grapes, per lb.....	15s. ,, 20s.
Strawberries, per oz....	— ,, 4s.
Foreign, per lb.	2s. ,, 3s.
Melons, Foreign, each	2s. ,, 5s.
English, do.	0s. ,, 0s.
Morello Cherries, per lb.	0s. ,, 0s.
Oranges, per 100	5s. ,, 12s.
Tangerine, do.	10s. ,, 20s.
Seville, do.	8s. ,, 15s.
Lemons	6s. ,, 10s.
Almonds, per lb.	2s. 6d. ,, 4s.
Nuts, Filberts, per lb.	— ,, 1s.
Cobs, ditto.	1s. 6d. ,, 2s.
Barcelona, per bushel.....	20s. to 24s.
Nuts, Brazil, ditto.	14s. ,, 16s.
Walnuts, per 1000 ..	10s. ,, 15s.
Chestnuts, per bushel	16s. ,, 24s.

Beet, per doz.	1s. to 1s. 6d.
Potatoes, per cwt. ..	7s. to 10s.
Onions, Y'ng per b'nch	4d. ,, 6d.
Old, per bush.	3s. ,, 4s. 6d.
Turnips, per bunch.	3d. ,, 4d.
Leeks, per bunch	2d. ,, 3d.
Garlic, per lb.	6d. ,, 8d.
Horseradish, per bundle.....	2s. ,, 4s.
Shallots, per lb.	6d. ,, 8d.
Lettuce, Cos, each, French	6d. ,, 1s.
Cabbage, do. do.	— ,, 1½d.
Endive, do. do.	— ,, 4d.
Celery, per bunch....	9d. to 1s. 6d.
Radishes, Turnip, per dozen bunches	— ,, 4s.
Ditto, long, per hund.	— ,, 6d.
Water Cresses, per doz.	9d. to 1s.
Small Salad, per punnet.....	2d. ,, 3d.
Artichokes, per lb.	— ,, 2d.
Asparagus, per bdl.	6s. ,, 10s.
Sea-kale, per punnet	1s. 6d. ,, 2s. 6d.
Rhubarb, per bundle	6d. ,, 1s.
Cucumbers, each.....	3s. ,, 5s.
Mushrooms, per pottle	1s. ,, 2s.

VEGETABLES.

Cabbages, each	9d. to 1s. 6d.
Red, each	3d. to 6d.
Cauliflowers, each....	6d. ,, 1s.
Broccoli, per bdl.	1s. 3d. to 1s. 9d.
Greens, per doz. bnch.	2s. ,, 4s.
Spinach, per sieve ..	— ,, 4s.
French Beans, per hd.	3s. 6d. ,, 5s.
Carrots, per bunch ..	5d. to 7d.
Parsnips, per doz.	9d. to 1s.

HERBS.

Basil, per bunch	4d. to 6d.
Marjoram, per bunch	4d. ,, 6d.
Fennel, per bunch ..	2d. ,, 3d.
Savory, per bunch ..	2d. ,, 3d.
Thyme, per bunch ..	2d. ,, 3d.
Parsley, per bunch ..	2d. ,, 3d.
Mint, per bunch	2d. ,, 4d.
Green Mint	6d. ,, 8d.

POULTRY.

The demand for good poultry is on the increase, and, as usual at this season of the year, it becomes scarce. The mild weather causes the winter birds to get hard, and there are no young to replace them.

WEEKLY CALENDAR.

D M	D W	MARCH 17—23, 1857.	WEATHER NEAR LONDON IN 1856.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
17	TU	St. Patrick.	29.951—29.924	44—39	E.	02	11 a. 6	6 a. 6	1 8	21	8 28	76
18	W	PRINCESS LOUISA BORN, 1848.	29.930—29.764	50—41	E.	24	9	7	2 18	☾	8 11	77
19	TH	White Poplar (<i>Populus alba</i>).	29.909—29.734	51—41	N.E.	—	7	9	3 18	23	7 53	78
20	F	Aspen (<i>P. tremula</i>).	29.953—29.932	52—40	N.	01	5	11	4 5	24	7 35	79
21	S	Black Poplar (<i>P. nigra</i>).	29.985—29.896	54—30	N.	—	2	12	4 39	25	7 17	80
22	SUN	4TH, or MIDLENT SUNDAY.	30.063—30.051	51—25	N.	—	0	14	5 4	26	6 58	81
23	M	Spurge Laurel (<i>Daphne</i>).	30.148—30.074	50—35	N.E.	—	v	16	5 22	27	6 40	82

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 50.7°, and 34.0°, respectively. The greatest heat, 69°, occurred on the 19th, in 1830; and the lowest cold, 16°, on the 17th, in 1845. During the period 116 days were fine, and on 80 rain fell.

ORNAMENTAL GRASSES.

WHEN a gardener talks about “mowing the grass,” how single is the idea conveyed by the expression! It is suggestive of nothing more than that the scythe has to reduce to an even sward one kind of plant. How contrary is this to the truth! for beneath every footstep on every lawn are different species of Grass, and every upland or lowland situation, every geological formation, every well-drained and every ill-drained soil, varies in the Grasses which can live upon its surface. Each has its particular Grass Flora; for, as it has been justly said, the Grasses are Nature’s especial care. They are her favourite costume for the earth, never out of season, and never displeasing to the eye. They all have that verdure more or less—that “grass green,” the very mentioning of which is associated with freshness and vigour. Yet the beauty of the Grasses is not confined to the refreshing colour of their leaves; for some have a beauty of form which for that gift renders them an object of the gardener’s especial cultivation. These are not very numerous, and we purpose to publish some notes relative to them and their cultivation.

ÆGILOPS SQUARROSA.
(ROUGH-SPIKED HARD-GRASS.)

The *culm*, or flower-stem, of this species is about nine inches high. *Leaves* shorter than their culm-clasping sheath, and fringed with hairs. *Spike* of flowers about three inches long, cylindrical. *Flowers* stalkless, pressed to the hollow rachis. *Calyx* two-valved; valves leathery, notched at the end; one tooth of the notch shorter than the other. *Corolla* two-valved; outer valve having a short awn, or beard; the awn longest in the flowers of the upper part of the spike. The male flowers have no awns on their corolla. This renders it necessary to observe that the *Ægilops* is one of the very few genera of Grasses belonging to the *Polygamia Monœcia* class and order of Linnæus; that is, perfect flowers, and flowers having only stamens, or flowers having only pistils, are borne on the same plant.

The *Ægilops squarrosa* was discovered by Tournefort in the Levant, and by Cavanilles in Spain. It is from species of this genus that recent researches justify the conclusion that our Wheat has gradually been raised, and it is a conclusion strengthened by the following facts relative to the species we are now considering:—

“Professor Henslow exhibited to the British Association a specimen of *Ægilops*, which had sprung up in his garden amidst a patch of *Æ. squarrosa*, which for three years in succession had been allowed to scatter its seeds over a portion of a bed appropriated to it. All the other plants had retained the usual characters of *Æ. squarrosa*; but the one in question had become perfectly upright, and wheat-like (triticoidal) in appearance. The awns had lengthened, and the glumes were downy. The plant was barren. The triticoidal forms obtained from *Ægilops ovata* and *Æ. triaristata* are stated to be generally barren; and it has been conjectured that all such must be hybrids. It has, on the other hand, been positively asserted that such triticoidal forms are occasionally fertile, and that genuine wheat has been extensively raised from them.”



Ægilops squarrosa is a hardy annual, and blooms in June and the early part of July. It likes a moderately

rich loam, and should be sown in patches, very thinly, any time in October. It was first introduced into this country about the year 1794.

TRANSPLANTING LARGE TREES.

I RECEIVED the following letter from a gentleman who is intimate at the Experimental Garden; but I told him, in my answer, that I should send the particulars to THE COTTAGE GARDENER. Every practical planter of large trees, every nurseryman in the kingdom, and almost all writers on the subject, know the value of preparing such large trees beforehand; yet, after all, nine-tenths of such large trees never receive due attention, or any sort of attention at all, till the planting season arrives. Hence the reason why so many of them die or do badly for a long time. There is no reason why a tree which four horses could draw on a truck should die or do badly after transplanting, if the proper means to secure it were resorted to, and at the proper time. That time is now at hand, and the proper means are explained, as far as I know them, in the answer to this letter:—

"It is my wish in the autumn to move and transplant two or three dozen deciduous trees of twenty or twenty-five years' growth, and which have never been yet disturbed but by the wind.

"This operation must be *begun* and *completed* between the 20th of August and the 20th of October, and I am naturally desirous of effecting this with as little danger or check to the trees as possible, and with economy.

"How can I best accomplish this task? Can I make any *preparation* to insure success?

"I have just read your remarks in THE COTTAGE GARDENER (as I always do), and I observe you make mention of a new 'lever' or transplanter invented at Shrubland. What is it, and where can it be seen nearer home? or could I not make one myself by writing to the 'honest' inventor?"

You are fortunate in having thought of this job just at the right moment. You shall, therefore, run very little risk, and the trees need not suffer much. The first thing to be done is to prepare the roots, and the whole month of April is the best time of the year for doing that, whether they are trees or shrubs, evergreen or deciduous. Have the roots cut round by opening a trench one foot wide, and three feet from the stems of the trees. After getting out the first eight or nine inches of the surface soil of the trench with the spade, let the rest of the soil be loosened by degrees with a three-pronged fork, and let this loose soil be cast out of the trench with the spade, taking care not to hurt the roots with it. The depth of the trench for your trees may be about twenty inches, more or less. Roots which are too large to cut with a knife may be sawn off close to the side of the ball next to the tree. Roots of the size of one's thumb may be cut a little longer, say half way across the trench, and the very small fibry roots saved whole as much as possible; that is, within the compass of the trench. If any of the roots are mutilated by the spade or fork, have the parts cut out clean with a knife, and the cut ends of all the roots will make fresh roots, as cuttings do, and these are the right kind of roots to feed the tree in the new place. Before the trench is filled up have *one side of the ball* reduced carefully at the bottom with the fork to very nearly half its diameter, in order to see if there be any tap roots which grow perpendicularly downwards, and if you see more than one such tap root cut them all except one; but one tap root should be left untouched to sustain the tree. Some are fond of cutting all tap roots at this

stage, but there is little sense shown in that. Suppose a dry, hot summer follows, the effect of cutting the whole of the tap roots would be to give the tree such a check as would unquestionably hinder the formation of the proper quantity of feeding roots from the side ones which must necessarily be cut, just as a few hours of hot sunshine on a pot of cuttings would pinch and hinder them from making roots in the usual time. If you find poor or bad soil at the bottom of the trench, out with it, and put as much from the surface soil in its place. In filling the trench keep the small roots, if any, as high or a little higher than they were before, and pack the soil firmly about them as the work proceeds, but leave the surface quite loose, that the rains may enter as freely as can be.

The first thing to be done in the autumn, when you begin to remove the trees, is this—let a man take a rope and a ladder, and fasten the rope round the tree as high as he can reach. By means of this rope you can pull down the tree to any side you may think the safest, so as not to hurt other trees near it, or its own larger branches. If you forget the rope till the tree is ready to be thrown over, the chances are that your man will break his neck by the tree falling over with his weight. The next thing is to open a trench *four feet* from the stem of the tree, that is, *outside* the former trench. The spade will do here all the way to the bottom; then with the fork loosen down the soil of the former trench into the new trench, and throw this soil out also. By this time you will have a fringe of young roots all round the ball, and your men must handle them as gently as possible.

The next step is to reduce the ball itself as much as you possibly can do with the fork. It is sheer folly to think that a heavy ball is of any use to a tree thus prepared, farther than to steady the tree in the new place; balls are only useful to such trees as have not been properly prepared at the proper time. The new roots are the feeders, not the old ones that are in the ball; and the new roots being all freed of the soil, as I have just said, no more harm can come from reducing the whole ball to nothing than is done already. Thus we reduce the ball and the expense of removing large trees to a minimum, and I will hold my old head on the block if the reduction of the ball is not just as useful to the tree as that of the expense would be to the owner. Therefore, reduce the ball as much as possible, and then is the time to pull the guy rope, and when the tree is on one side is the right time to get at the tap root; cut it wherever you can get at it, and the work is three parts done.

The other part is the planting, and the hole must be four feet across, and nearly as deep as that from which the tree is taken; but it must be so formed with good surface soil as to resemble the shape of a handbasin. This is the grandest secret in all planting, and the meaning of it is this:—A hole four feet wide, and deep enough for the roots, is opened, with the sides cut down perpendicularly; then the perpendicular is made into a slope, like the inside of a handbasin, with loose surface soil, *before* the tree is put in. Ninety-nine persons out of one hundred put in the soil on the slope *after* the tree is placed in the bottom, but the first is the best plan. Any stupid fellow can take up a tree if you only tell him not to hurt the roots; but it requires great practical skill even to learn the value of the proper way to plant it, and much more so to do it after knowing the value. It took many years' hard writing before we convinced very sensible men of the danger, the bad effects, and the real stupidity of shaking a plant up and down while it was being planted, just as if the man was trying for butter with the handle of a plunge churn. That injurious practice is over now, but it will take some years yet to convince the great bulk of planters of the value of water and handbasins in planting trees; that is, to convince them of the grand secret.

Well, then, let us now say the tree is placed in the centre of the pit, and the roots are lying on the slope, or the longest of them are, and the space below them all round, and to the centre of the ball, or where the tap root lies, is hollow, and the grand secret of planting hinges on the manner in which this hollow below the roots, and all the hollows among the roots, are filled up, and with what kind of earth. The more common way is to dig the bottom of the hole before the tree is put in, or to return some better soil into the bottom of the pit, which amounts to the same thing; to leave the bottom of the pit level, and to spread out the roots on the level, the effect of which is to encourage the roots to grow downwards; and when the roots are pressed with the soil it compels them to do so, and the lower they go the worse it is for them. The next bad move is to throw soil over the roots in rough, unbroken lumps and clods, making more hollows for the air to get at, and dry the soil and roots. And the third bad move is to throw in the soil among the roots *between the tree and the spade*, or the man who works the spade; because that way of filling is throwing the soil *against* the roots, and, of course, that must "double" the fibres back; and if they are left so, the practice is as bad as that of shaking the tree, which leaves the small roots in loops, instead of their ends being turned or doubled back by this throwing against them. And the last bad plan is to trample or stamp down the soil with the foot. None of these moves are now allowed by the best planters. They form their pits as I have just said; break all the soil for the roots as smooth as possible with the back of the spade; and no more than three men are allowed to plant one tree—one to hold it firmly on the perpendicular, and two with spades; but as many men as you please to draw and pour in water, the water being, in every instance, considered the grand agent in the whole business. The first move, after the tree is in the pit, is to apply the spout or spouts of watering pots to the sides of the handbasin-like slope, *not to the stem or ball*, which is a contrary move. The slope, being of the best loose soil, is easily washed down all round to fill up the hollow under the roots first, and the hollows among the roots afterwards. If more soil is required the spades throw it *on the slope*, not among the roots, until the bottom hollow is quite full in a puddle, and the small roots are seen floating, as it were, in this puddle. After that—the first stage—there is no more watering from the sides; but now they water *against the stem* of the tree, whether there is a ball to the roots or not, and on no other part of the surface is a single drop of water allowed to fall during the process. First water from the sides till the roots are afloat in a puddle, and then water the stem to wash more and more earth down over this puddle, which will *run out* the smallest fibre, and bed it in a smooth, soft, alluvial deposit, as a chemist would say. In applying the soil to be "washed down more and more," each of the two spademen throws the soil *past the stem* of the tree, not each filling his own side of the tree or pit, but the side farthest from him; then his throws help to *run out* the small roots from the ball, or from the large roots, as much as the water does.

When all the roots are covered they change tactics again. They begin to form a ring of three or four inches or more in depth over the sides of the original pit, and work up to the stem, keeping the ring level by the level of the last watering. When a tree is thus thoroughly planted the last watering does not run away till it gets over the sides of the pit. Down it cannot go; for if it can there is a screw loose, and it is when it begins to run past the diameter of the pit that they make the ring of earth there to hold back the water, so as to confine it as long as possible over the roots, and by degrees they "bank" the water back to within nine inches of the stem of the tree, and they fill that space with water the last thing, and the space is called a cup to hold

water. All transplanted trees have this cup, and all careful planters keep the cup full for some days after the planting, or, at least, fill it every day as long as the puddle seems to sink down; but if the soil is sandy, and the work is carefully performed, there will be little sinking. Still it is a good plan to water the cup often, not so much for the sake of the roots at first, as to wash sand into every crack and crevice among the root as the puddle dries.

Now, any one who wishes to learn to direct the transplanting of large trees may write out the heads of this story on the back of a visiting card, and learn to repeat them from memory in a few minutes; but I would not advise much expense in *amateur*ing on such work. I would recommend a competent leader; but I would let him understand that I knew as much about it as he did, and that he must be responsible for the whole thing to the end of the first growing season.

There is a good deal in the "looking after" for the next summer which an amateur might not perceive or think about. They transplant as large trees in the Experimental Garden as can be done in any garden in the country without machinery. They never take a ball with a tree that has been prepared as here set forth, and if a tree must be moved that has not been so prepared they take a ball such as all their force can carry, and when that fails there is an excellent neighbour not far off, a celebrated maltster in Kingston, and he lends half a dozen "hands," stouter men and stronger than your London draymen.

For "staking" large trees three ropes fastened at equal distances round the stem to stakes driven in the ground, and slanting from the tree, are much better than stakes which soon loosen and chafe the bark. Large trees are thus held firm at the Crystal Palace. Cocoa-nut fibre cord, such as is used for mats, makes the best and cheapest of such supports. It is sold by some small manufacturers for fourpence a pound, and the Editor of THE COTTAGE GARDENER could tell how many pounds would go to a mile length of the cord, for he used so much of it this season.*

D. BEATON

WINDOW GARDENING FOR SPRING.

(Continued from page 395.)

SUPPOSING the spring to extend from the end of February to the middle of May I will now proceed to mention

SOME OF THE OPERATIONS NECESSARY TO SUCCESS, merely premising that as the objects of our care are growing existences, as distinguished from mere unorganised matter, pleasing and prosperous results will, in general, be in proportion to our correct thinking, intelligent reasoning, and unremitting attention to their varied wants. Some gentlemen who have of late commenced the study and the culture of plants have informed me that previously they had no idea that, from such sources, such fields of observation and ranges of thought and inquiry could have been opened up to them. Into this tempting field, however, I cannot enter, but will content myself with detailing in a very plain way some of the simplest manual operations. Several of these have already been indirectly introduced; but to insure clearness and simplicity I will give them a prominent place, that they may be the less easily overlooked.

1. WASHING AND SYRINGING.—I have already dwelt so much on cleanliness, because I believe it to be one of the principal elements of success. I have great faith in clean water, whether applied to the leaves of a plant or the skin of a man. When called into consultation by young ladies who were next to despairing of ever getting their plants

* This is a figure of speech; but we can bear testimony that cocoa-nut fibre rope and string are the best of all fastenings for trees and shrubs. We knew it in India, where it is employed under the name of *Coir*. It neither shrinks nor expands either when wetted or dried, and lasts unrotted for many years.—ED. C. G.

to grow, the leaves being so dirty, and the insects so numerous, I could not help wishing that the poor things had received only a tithe of the attention bestowed so willingly on the charming collars, and neat, spotless, embroidered wristbands. A lady is none the less a lady if she dispenses with these latter accessories at times, and must do so if she would have pleasure and success in gardening. I have been thanked with a look of amazement that said as plainly as possible, "What a thoughtless, careless thing I have been!" when, on turning up my sleeves, spreading the fingers and palm of the left hand over the surface of the soil in the pot, and turning the head of the plant topsy-turvy into a pail of water, moving it briskly several times through it; then setting it upright, and washing every leaf, upper and lower side, between the fingers and thumb; then swinging it again through clean water, and setting it once more in its position as pleasing a gem as a queen could wish to have in her company. There are many plants a disgrace to windows, because, from something like despair, the owners never try to keep them clean. Nimble fingers would soon make all the filth disappear. I have seen more time spent in a morning in unavailing regrets than would have sufficed for setting adrift every insect and dust spot from their favourites.

The above mode of action is applicable to all smoothish-leaved plants, as Myrtles, Camellias, Oranges, &c.; and if a little soap is dissolved in the first water, and in the washings before the last swingings, so much the better. When on examining the foliage you find that it is supplied with bristly hairs or down on either side, then a sponge will be preferable to the fingers. In all other cases the fingers will be best, as no mechanism can ever be made to equal them. It will also be advisable, in all cases, for beginners to have a piece of loose cloth to place over the surface soil of the pot before the palm and fingers are placed across it with one hand, while the other hand holding the pot reverses the top of the plant in the water. The cloth thus held prevents the soil dropping out, and when the plant is set upright, and you are washing or sponging the leaves, the filth obtains no entrance to the soil. When finished, scratch off a little of the surface soil, replace with a little fresher, and if the pots are likewise clean all will then look comfortable.

In the case of plants too large for a pail or tub it is best to lay the plant down, wet it all thoroughly from the rose of a watering pot, much better still with a good syringe, a substitute being found in a good-sized boy's squirt, especially when you can so manage the nozzle, by placing against it the forefinger of the left hand, as to regulate the discharge at will from a strong jet to a misty dew when desirable. Of course similar means must be adopted to clean the plant when washed.

As such washings are thus promotive of health, so frequent sprinklings over the foliage will act as the great antidote to disease, insects, and decay. In the course of our travels together we shall very likely find that there are plants and circumstances in which a slight sprinkling even in sunshine will be advisable, especially if the glass of the window is good, so that there is no danger of burning spots from the rays of the sun finding foci in the glass, and foci in the drops of water; but we will have a thorough understanding about these cases as we proceed. Meanwhile, taking Nature as our guide, which, with the exception of a sunny shower, seldom washes vegetation without withdrawing direct sunlight, we would prefer a dull day, or a period or a place when the sun was not shining, for washing our plants; and as *dew*, which we wish our sprinklings somewhat to resemble, is never formed until the heat obtained from the sun has been so far dissipated that the body dewed is colder than the surrounding atmosphere, from which it condenses the moisture existing as vapour; so, as soon as we can calculate on the absence of risks from frost while the leaves of the plant are damp, would we prefer the afternoon and evening for this sprinkling, refreshing process, and thus so far provide against the injurious influence of the dry atmosphere which obtains in living rooms. Allowing the plants to stand on damp moss will also help to keep more invisible vapour in the atmosphere in which they grow. In dull weather in winter, when the room is dry and hot, we would sprinkle them in the forenoon, and early in the afternoon when sunny.

2. DESTROYING INSECTS.—If the previous operations are attended to, and the plants supplied with a suitable temperature, fresh air, and water as they require it, insects will seldom trouble them. One thing be sure of—that if you allow them to be fairly occupied and injured the destroying of the insects is but a next-door operation to burning plants and insects together. The remedy should be applied as soon as ever one is seen. If you allow them to insert their myriads of colonies of eggs you may wash off or otherwise destroy every living insect, and yet in a few days you may have as many as before, so amazingly soon are they hatched into active existence. In some fleshy insects, as very fat green fly, though easily squeezed to death by the hand, yet if very numerous their animal remains are very hurtful to the tender vegetation that is forced to absorb them. Washing them off, or first stupefying and then killing them with tobacco, so that they fall from the plants, are the best remedies. The smoking of young gentlemen's Havannahs might thus be turned to some purpose. Shutting the plants in a small closet or box, and smouldering a little shag tobacco about them, would make them drop for that time. The great thing is not to make the smoke too strong, nor yet allow it to be hot; therefore, when lighted, it should be covered by something like damp moss. An ounce of tobacco, boiled in five gallons of water, may be used when cool for dipping the head of the plant in; but it should be shaded for a day, and then pass through clean water before exposing the plant to the light. Next to green fly, thrips and red spider are the most troublesome enemies—both very small, but destructive, and always known to be present by showing glazed-like pieces in the under side of the leaves in the one case, and by an unhealthy, pale, spotted appearance in the other. Water and moisture are the great enemies of both. When very bad shut the plants up in a close box; take a saucepan with a close-fitting iron lid, fill it nearly full of water, heat it to 170°, paint the lid with sulphur-and-water paint, and then place the saucepan with the close lid in the confined place, and the fumes will help to settle the insects. Of course keep the heated saucepan, or whatever the vessel you use, at a distance from the plants, and when the plants are taken out syringe them well with clear water. A scaly insect collects on some plants, which must be washed off. Few of any kind will make their appearance if the plants are kept clean and healthy.

3. VENTILATING, OR CHANGING THE AIR ABOUT PLANTS.—If attention has been paid to what has been said of the various functions performed by the leaves of plants, the importance of giving them fresh air in rooms will at once be recognised. Many never knew how to regulate their rooms for their own comfort until they studied what was essential for the well-being of their plants. In the northern division of Britain there are many windows where plants could not thrive, just because the windows are fixtures never intended to be opened. Can this be a reason why you may traverse whole principal streets in cities and towns in Scotland, and not catch sight of a pot plant or a box of Mignonette? Whatever the plants we cultivate, the more healthy they will be in proportion to the fresh air they receive. Those are the most dependent on this change of air which receive least of direct sunshine, because in sunshine the plant, to a certain extent, purifies its own atmosphere. Air-giving must, however, be dependent on human comfort, as well as the welfare of the plants. In towns hardy things are often grown, and these in fine weather, if not previously enervated by confinement, can hardly have too much of the pure breezes. In the country, and even somewhat generally in towns, plants rather tender are grown in windows, because, if just kept from frost, they succeed much better in such comparative confinement than hardier plants would do. The night average temperature of such plants, during the spring months, may range from 40° to 50°, with a rise of 10° to 15° from sunshine; and when the sun shines, or when the fire of the room raises the temperature during the day, then is the most suitable time for admitting a little fresh air, and until the weather gets warmer it is best to do so by pulling down the sash a little. A very little opening soon changes the atmosphere, and that little given early and continued some time is better than giving more at once. I prefer pulling the top sash down an inch or two instead of raising the lower sash, because then

the air is heated somewhat before it reaches the plants. When the window opens in half all its length, like folding doors, air must be given with more care. In very cold weather enough will be admitted by the doorway. In fine days in April and May there will be little danger of excess of fresh air.

4. SHADING.—We seldom shade healthy, established, hardy plants out of doors; but it is sometimes necessary to do so with our pets in windows, thus placed in such artificial circumstances. It is most needed in sudden changes from cloud to sunshine, and when we have been doing anything to our plants, such as potting, &c., that has disturbed the reciprocal action between roots and foliage. It is also resorted to when we wish to preserve the bloom of a plant longer than we otherwise could hope to keep it, though we may thus somewhat injure the constitution of the plant. It will before long be seen that it is also needed in all delicate cases of propagation by cuttings. Its total neglect is often very prejudicial to plants. Here, for instance, is a plant fresh potted or partially disrooted a week ago; the weather has been dull every day since, but to-day the sun shines brightly, and, water as you will, every leaf flags. A muslin curtain would have prevented all this mischief. But another mischief is sometimes produced by over-shading, or continuing the shade longer than is necessary, and that is even the case when the plant could do without it. A vast number of people when they shade a plant never think of removing it until hours after the cause of shading is gone, and thus the shading enervates the whole system of the plant. It was lately noticed that the additions of solid matter to a plant were only made during unobstructed light. All shading has the tendency to elongate or spindle out what previously existed. Use it, therefore, but do not abuse it.

The substitutes for it are chiefly two, and when convenient I prefer the first, or the second when there is nothing to render it impracticable. The first is to withdraw the suffering plant to a distance from the window, so that the light will be more diffused before reaching it; and the plant, while it will be equally eased, will not be so enervated as by injudicious shading. The second is to damp the foliage, and thus force it to absorb as well as perspire. Of course I am not alluding to a plant flagging from dryness at the roots—a watering in that case will be the proper remedy; but to that flagging which is either the result of some peculiar operation on the plant, or some great sudden change in the weather from cloud to sunshine, and which no deluging at the roots will neutralise.

R. FISH.

(To be continued.)

DRY-ROT IN BUILDINGS.—A communication was made at a late Meeting of the Linnean Society respecting a peculiar form of dry-rot which spread with extreme rapidity in the church of King's Wear, Devonshire, by means of long, byssoid, rope-like shoots, different in the mode of their development, except on a very small scale, from anything which had before come within our notice. A still more curious case, which we are inclined to refer to dry-rot, has lately been sent to us for inspection, reminding us of the mural leprosy of Judæa, attacking, as it does, and more or less destroying, not merely the timber, but the solid walls themselves. It occurred in an old house near Erith, on the banks of the Thames, where it has penetrated into every crevice in and between the walls and woodwork, separating the bricks and mortar, and rendering the whole so friable that the walls must be rebuilt to prevent their falling down. The mycelium here forms a widely-expanded network of threads, which are twisted together in every possible way, so as to form anastomosing strings, of considerable tenacity, as thick as small pack-thread. A strong solution of corrosive sublimate is an effectual cure for such destructive affections, where it is at all possible to apply it; but where, as in the present instance, the plague infects the whole substance of the structure, destruction seems to be the only remedy. The circumstance of the mycelium penetrating into the mortar and brickwork to such an extent appears to be new; at least, we do not recollect to have heard of anything of the kind before.—A BUILDER.—(*Dorset County Chronicle*.)

THE DAHLIA AND ITS CULTURE.

THE operations necessary to grow the Dahlia will consist in preparing the soil, starting the plants into growth, propagating to increase the number of each variety, planting out, summer culture, and winter culture. All these points of culture have already partially appeared in our pages, but some improvements have been adopted by different growers. These I shall embody in my remarks; and another reason for apparently a repetition is, the great number of fresh subscribers that are patronising *THE COTTAGE GARDENER*, who, it is reasonable to suppose, have not the preceding volumes by them to consult. Without further preamble, then, I proceed to give my experience in Dahlia culture.

PREPARING THE SOIL.—This includes the site also, for it is useless to plant Dahlias on a high ground exposed to all the wind that blows, or in a low swamp, where, should the season prove wet, the roots would be destroyed and rot away. A happy medium between the two is the most desirable. If there are plantations at a short distance of moderately high hedges, the advantage and use of such protection would be of the greatest service.

THE SOIL.—The best is a deep friable loam, though, if it be rather clayey on a dry bottom, it will answer very well. In a light soil the Dahlia produces an immense quantity of stems and foliage, but the flowers are neither so large, so well shaped, nor so highly coloured; in fact, I have seen plants in such light, old garden soil that hardly flowered at all. If the soil has not been turned up last autumn no time should be lost now. It should be dug deep; indeed, if the expense is no object, it would be of great advantage to trench it two spits deep. Good Dahlias, however, may be grown by digging the ground one spit, providing the blade of the spade be a foot deep, and thrust in nearly perpendicularly. If the ground is poor it should be enriched by a good dressing of well-decomposed manure. It should, whether dug simply or trenched deeply, be left as rough as possible, in order to receive benefit from aëration, and from the frosts and rains. In that rough state it may remain till the planting season in May or June arrives. Then take a five-pronged fork, and with it fork it deeply over, picking out all weeds or other extraneous matters. It is then ready for use.

STARTING THE PLANTS INTO GROWTH.—This is necessary when the grower wishes to increase his stock of plants. Whoever wishes to contend for prizes at one or more exhibitions should grow at least four plants of each good variety, though six would not be too many if the grower has space enough for that number; hence he should know how to set to work to obtain that number early in the season, so as to have them strong and well established by planting time. Make up a gentle hotbed, provided you have not the convenience of a store propagating house. As soon as the bed is of a moderate heat cover the dung with sand, or, if that is scarce, with coal ashes; then examine the old roots, cut away all parts that are dead, even the old stems; and if the living roots are very large, so as to be inconvenient, you may shorten in the longest, so as to bring the roots into a moderate size. Procure some grafting clay, and put a moderate thickness over the place where the old stem has been. This is of great service by preventing wet from entering into the hollow of the root. It has the effect, also, of keeping the top parts of the tubers alive and moist. In many cases the incipient buds are just in that place, and if that part becomes dry or dead the buds perish. This claying over is now practised by all, or nearly all, large growers. When the roots are trimmed and clayed place them as thickly as possible all over the surface of the bed, working them in amongst the sand or coal ashes, leaving just the crowns level with the material they are plunged or planted in; then give a gentle watering,

and keep the heat up to 55° or 60°, not higher. Give air in sunny weather, and water when required. The buds will soon start, and in a short time the shoots will be long enough to take off; they are then ready for propagation. In the meantime a second hotbed should be made to be ready for the cuttings.

PROPAGATION.—As soon as the shoots are two or three inches long no time must be lost in preparing cutting pots to receive them. Some use only one pot for each cutting, and where there is plenty of hotbed room it is a good plan, because then there is no danger of breaking off the young and tender roots in potting them off after they have made them; but if room is circumscribed, then pots four or five inches wide may be used. In either case the pots should be thoroughly drained, and filled with light, moderately rich soil, leaving space for about half an inch of pure silver sand. When a sufficient number are filled give a gentle watering to settle the sand, and proceed to gather all the cuttings that are sufficiently advanced. Should such a case occur as only one shoot to be springing from one plant, and no more buds visible, then cut off the cutting with a sharp knife, leaving the two lowest buds on the plant. These will spring up directly, and soon afford two more cuttings. When the shoots are numerous they may be carefully slipped off entire, and planted just as they are, unless any jagged pieces appear: these should be carefully pared off. Great care should be taken that each cutting, or batch of cuttings of any one variety, are all correctly and securely labelled, so that no mistake should occur. Wherever it can be done one pot should be filled with one variety; for where two or three or more sorts are put in one pot they are, without very great care, apt to get mixed, and thus lead to confusion and uncertainty. It is better to use a small pot for one cutting where only one is afforded, or a little larger for two, a size larger for three, and so on in proportion to the number of cuttings of any one kind. Too large pots, however, should be avoided; they take up room, and are unmanageable in potting off the cuttings. When the cuttings are gathered, plant them as quickly as possible in their respective pots, using a smooth, small dibber. Ivory is the best material, though I have used a common goose quill just as it is plucked from the wing, excepting the feathery part cut in so as to be handy. Fasten the cuttings in firmly close round the rim of the pot. I would place even a single cutting in a small pot close to the side. I think they sooner strike root in that position than when planted in the middle of the pot.

When all are planted set the pots in the hotbed that has been prepared for them, covering the dung previously with a sufficient covering of sand or coal ashes to keep down the rank steam. The only care they require then is securely shading from the sun's beams, and supplies of tepid water whenever the sand appears dry. Dahlias are not difficult to strike. I seldom lost a single cutting, though some varieties strike root more readily than others. As soon as symptoms of growth appear no time should be lost in potting them off; for, if allowed to stop in the cutting pot too long, the roots become matted together, and there is considerable difficulty and danger in separating them. Three-inch-wide pots are quite large enough for the first pot. Use the following compost for this purpose:—One-third decayed leaf mould, two-thirds decayed, turfy loam, with a small portion of sand to keep it open. When all are potted off place them again in the hotbed, and keep them there till fresh roots are made, shading on sunny days, and giving air to keep down the heat. After they are fairly established place them in a cold frame sufficiently covered up every night to keep off the frosts that may occur; but on all fine days draw off the lights, and fully expose the plants. By this treatment, with

due supplies of water, the plants will thrive, and grow stout and strong. Many Dahlias are sadly spoiled by being too much confined, and kept too warm. Those who wish to have good strong plants by the planting-out time should repot the plants as soon as the pots are filled with roots. With this extra care they will grow surprisingly strong, and will flower stronger and earlier, and the blooms will, in consequence, be finer. It may even be necessary to remove these strong plants out of the frame, and place them under a canvass awning, to shelter them from the spring frosts, till it is safe to plant them out in the open ground.

Where the stock of roots is large, and the amateur does not care to increase them, he may either plant each root entire or divide each into two or more divisions, taking care to leave at least two buds to each. Even if this method is adopted it is desirable to give the division a start in a gentle heat, so as to have them advanced in growth by the planting season.

PLANTING OUT.—The ground being forked over as directed above, and all the plants in readiness, the planting may be done as soon as it is tolerably certain that the frosts are all over. As stakes must be had for the Dahlia, it is an excellent plan to drive them first in the exact places where the plants are to grow. Some grow their Dahlias round the borders of the garden near to the walks; but by far the best plan is to devote a square piece of ground for them. In that case care should be taken to plant the tallest growers either in the centre or on one side, the second size next to them, and the dwarfs in front. This is much more artistical and desirable than planting them indiscriminately. When planted so, the dwarfs are almost smothered and their beauty concealed by their gigantic brethren. The distance from plant to plant should never be less than six feet in the row, and seven feet between the rows. In good, rich ground these spaces should be increased, that is, of course, if the grower can spare so much space. By giving plenty of room the grower and his friend can walk amongst them, and see the flowers without brushing against and breaking the branches; and, besides that, the operations of tying, sheltering the blooms, mulching the ground, and watering in dry weather, may be done with greater convenience and less injury to the plants. Choose a dry, still day for the planting; bring out the plants, and set them in their places, securing the labels to the stalks; then, to make doubly sure, take a memorandum-book, and write down the names as they stand in the rows, commencing at one corner and ending at the opposite one. This may be done either just before planting or immediately after it. The operation of planting is simple enough. All that is required is to turn each plant carefully out of the pot, and place it in a hole made with a small spade nearly close to the stake, planting it a little deeper than the ball, and closing the earth firmly round it; then gather up the pots, tie each plant to its stake, give a good watering, and the next day rake over the ground to give it a neat appearance. The operation is then finished, and the future management is comprehended under the head

SUMMER TREATMENT.—During this season the operations necessary are constant attention to keep the plants tied to the stakes, mulching the ground round each plant, watering freely in dry weather, shading the blossoms as they expand, and diligently looking after and destroying insects. I need scarcely say that the ground should be kept clear of weeds: *that every lover of his flowers will be sure to attend to.* On each of these operations I will make a few remarks. Particular attention should be given to the ties. During the growing months the stems will swell surprisingly, so much so that it will be necessary to cut the first strings, or they will cut the stems almost in two. I have seen

stems broken off with the wind just at that place where the tie had been allowed to remain.

Again, as the plants advance in growth it may be necessary to place three or five subsidiary stakes round the plants. These are for the purpose of tying the side branches to. If this is not done the branches as they become heavy will frequently split off close to the main stem. Such branches often produce the very best blooms; hence the loss of them reduces the chances of obtaining such blooms. Besides this, the tying out the branches to these out-stakes opens the centre of the plant, thus giving light and air to every leaf. This is always advantageous to branching plants of any kind.

MULCHING THE GROUND.—It is scarcely possible to obtain first-rate blooms without this. Have ready some half-rotten dung (perhaps cowdung is the best); spread it round each plant when half grown so as to cover a radius half a yard from the plant, leaving it rather hollow in the centre. To prevent it blowing about pat it gently down with the back of the spade; and give it a good watering from a wide-rosed pot. This will make it close and firm, and the water will descend to the roots enriched with the juices of the dung, and every successive watering will, in a degree, have the same effect. In dry weather copious waterings will be necessary to keep the plants in vigorous growth. T. APPLEBY.

(To be continued.)

RISING AND FALLING GREENHOUSE STAGE FOR PLANTS.

THERE was a new invention exhibited before the last meeting of the Horticultural Society which I did not mention in the report, as I wanted a copy of the letter which was sent by the inventor, and which was read to the meeting. The inventor is well known by name to every man and woman in the three kingdoms who is fond of plants, *Robinson's Defiance Verbena* being his last best seedling. He is one of the best, if not the very best grower of some kinds of plants in England. He often took first prizes in that room, and he has been employed by the Horticultural Society as one of their judges, and, to my own knowledge, they never employed a second-rate judge for the last twenty years; therefore an invention by such a practical man for the better cultivation of plants is worth more than a passage in a flying report. J. Simpson, Esq., the celebrated engineer, one of the three engineers who reported on the rebuilding of Westminster Bridge, and had seen this invention, gave a most favourable opinion on the application, and advised Mr. Robinson to have it patented at once. Mr. Robinson was once head gardener to Mr. Simpson.

These things do not come strictly within the scope of the Horticultural Society, but rather to the Society of Arts; and the Horticultural Society having always been "hard up," they never encouraged garden inventions as they could wish; therefore the less they could say about them the cheaper they got out of patronising inventors; but let us hope that the new Council will turn over a new leaf without being more extravagant.

This invention by Mr. Robinson is to supply what he and all good gardeners often felt the want of in their plant houses, and at all seasons of the year. It is a most simple and most effectual way of raising up plants to the glass so that the leaves might touch it if needs be, and of lowering them from the frost at night, and up with them in the daytime. A stage of any size or shape, and of any weight up to five tons, or, perhaps, five times five tons, can be raised or lowered by this invention as easily as a stage of so many pounds weight. Weights at the end of cords, which turn over pulleys

near the top of the house, work the whole stage in a small house as easily as a window in a cottage, and for larger or heavier weights there is a "capstan" under the stage, by which the pulleys do the work quite as safely; but Mr. Robinson's letter will tell the story much better. What I say is from a very minute examination of an excellent model of a greenhouse of six lights, in which the stage is in two halves, one half being for three lights; but that is merely to show how the stage, in a very long house, might be worked in parts, according to the size of the plants upon it. The whole turns on the expense; the practicability and the desirability of the thing are beyond a question. Hothouse builders are the best parties to take up the subject in the first instance, and, having proved the expense, they need not fear but that gardeners will approve of the patent. Some spirited amateurs will dash into it at once, and some will wait the verdict of more extended experience, but none need wait to see the practicable part proved. That has been proved long since in the "mind's eye" of every good gardener in the country, and for the rest I beg to join in the approbation of Mr. Simpson, my next-door neighbour, and in the hopes of a better gardener than—D. BEATON.

Mr. Robinson's letter is as follows:—

"The author of these few lines being a cultivator of various kinds of plants for nearly twenty years, has, from time to time, seen the necessity of a stage like the one I have described, which you observed the other day was moveable. The application of lifting weights as here shown claims for itself an established and recognised law, for which I have no desire to take self merit; yet I conceive the present to be the first illustration of its applicability to that of a moveable plant stage, and in that belief have secured to myself its patent right.

"I need scarcely observe that, at stated periods of their growth, it is imperative that plants, especially those termed soft-wooded, should enjoy a situation as near the glass or roof light as possible; in fact, the nearer the better. That the beneficial influence of such a situation may be the more readily attained, the simple and inexpensive mode of raising and lowering the stage is acquired to the minutest degree; hence I feel the invention to be an important desideratum. The economy of time and labour made in watering, cleaning, and otherwise examining specimens is not the least of the many benefits which are claimed for this contrivance. To all connected with plant growing the toil of lifting heavy plants to the water-pot, or the water-pot to the plants, is familiar: this is largely obviated by the instantaneous lowering of the entire stage of plants, whereby the whole are the more readily brought under observation and operation. At the times of sudden frosts how much safer will a house of plants be five feet from the glass than close to it; and such degree of safety is secured by this contrivance, the plants being brought into a higher temperature without the cost of raising the heat of the whole house. The inspection of a stage of plants is made more easy at a time when in flower, the raising or lowering being entirely at will. The amount of weight by which the stage may be laden is not of the slightest consequence—five tons may be as readily and as easily lifted or lowered as five cwt.; nor is this done at a cost for expensive or complicated machinery. Any stage, be it oblong, round, or octagon, may be operated upon with equal facility, and with little risk of getting out of order, or its efficiency being reduced from wear and tear."

WINTER AND SPRING GARDENING OUT OF DOORS.

I SEE the above in THE COTTAGE GARDENER for February 17th, from "A NEW SUBSCRIBER," who, in common with many old subscribers, is anxious to enliven the flower garden as much as possible during the early spring. Now, I doubt not but there are plenty of readers of THE COTTAGE GARDENER who could give some valuable hints bearing on the subject, of a more economical character than is practised

in such establishments as Moor Park, &c., and perhaps it is only the want of knowing how acceptable they would be that prevents them doing so; for I, in common with "A NEW SUBSCRIBER," have beds that are seen from the dining-room table, both south and west, and to let them remain empty till bedding-out time would never do for a reader of THE COTTAGE GARDENER, unless he reads to no profit. Therefore, with your permission, I will just give my own experience in furnishing the above beds during last year. The beds are circular, and raised about a foot above the lawn.

No. 1 bed. First, a row of *yellow Crocuses* round the edge; next, a row of *double Snowdrops*, which I prefer, as being later than the single ones, and coming in with the *Crocuses*; then a row of *Victoria Crocuses*; then a row of *Sir Walter Scott*; then one of *Ne Plus Ultra* as close as I can put them together (all in three-inch pots) from the *Snowdrops*. I then fill the bed with sorted *Hyacinths* in pots also, and all in bloom. This was on the 14th of March, and a cold day it was. I had grown the above in an old shallow pit that was made for early Potatoes, and covered with thatched hurdles when the weather was severe.

After putting in the above bulbs I put a row of *Nemophila insignis* just inside the *Snowdrops*, and by the time the *Crocuses* and *Snowdrops* began to fade I had a belt of blue all round, and by the time the *Hyacinths* were done it had very nearly covered the whole bed, and it concealed the consequences of their fading very much indeed. The *Nemophila* is self-sown during the summer; and in the fall, when I am forking the beds, I remove that and *Gilia* and several other little things into a sheltered situation, where I can keep off heavy snows, and by this time they are nice sturdy plants, and I generally get a bed or two of the blue, and off again in time for other annuals.

This bed lasted two months. I then carefully took up the bulbs in pots, put them back into their old quarters, and just as carefully turned back the *Nemophila* to the edge of the bed; then filled it with *scarlet Geraniums*, with scarcely a leaf on them larger than a shilling. I then placed the *Nemophila* amongst them, and in a few days it shot up as high as the *Geraniums*, and it puzzled a good many people to tell what it was at a little distance, and by the time the *Nemophila* began to fade the *Geraniums* made a very respectable appearance, and throughout the summer that bed was a perfect blaze.

I began taking cuttings from them as soon as I found them getting too thick, and on the 27th of October I took up the *Geraniums*, and on the same day I filled the bed with *Pompones*, sorted colours, and they held out to the end of December. I could have filled it out again with *Wall-flowers* in pots, just to keep it green, as I had plenty by me; but I put them in a match bed not so much in view of the windows.

No. 2 bed was *Van Thol Tulips* and *Nemophila grandiflora*, with one row of *Crocuses*; then *fancy Geraniums*; then *Pompones*, all yellow; and now, 7th of March, I am making preparations to follow out the same plan.

I beg to say that I made covers for the above beds with hooks fastened together, and calico strained over them umbrella fashion, so that the beds were protected from frost and rough weather.

A good while ago, when Mr. Beaton was writing about *Roses* on their own roots, you favoured us with a woodcut of the pots and cuttings, and made it so easy, that striking *Roses* is no more difficult than striking *Gooseberry* cuttings. Now, if you and Mr. Beaton would give us the same treat respecting grafting *Geraniums*, with the treatment they should have before and after, as I for one should like to be trying my hand at it this spring.—THE DOCTOR'S BOY.

PHOTOGRAPHY FOR GARDENERS.

WE propose giving our readers a few simple directions by which those of them who are not artists may be enabled to produce exact copies of any leaf, flower, or fruit whose shape they may wish to preserve.

Leaving theory to others, we proceed at once with the practical.

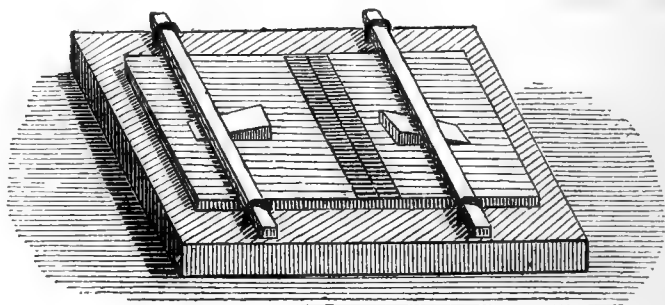
First, then, we need a photographic press. A simple and efficient one may be made as follows:—With four pieces of wood, of which the section is annexed, form a strong frame, the rabbet being inwards.



Into this a plate of strong glass is fitted, and a stout board cut for a back a little smaller than the glass. Two staples are driven in each of the opposite sides of the back to receive the ends of moveable cross pieces.

The back is cut in two, and hinged together in the middle with a piece of leather. It is kept in its place against the glass by wedges introduced between it and the cross pieces.

The accompanying drawing shows the back of the frame when put together.



PREPARATION OF PAPER.

Solutions.

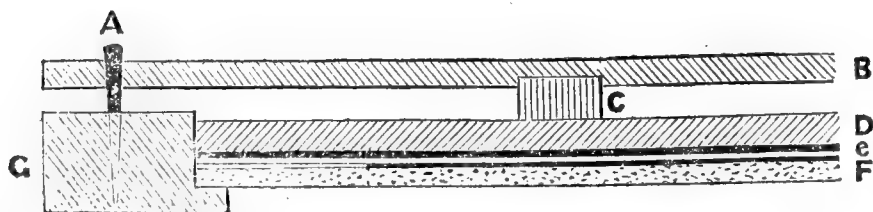
	Solutions.	Cost.
A.	Forty grains nitrate of silver dissolved in one ounce distilled water.....	8d.
B.	One ounce hyposulphate of soda in one pint of common water.....	6d.

Several pieces of paper cut to the intended size are placed in a basin of salt and water, mixed of such a strength that the taste of the salt is just perceptible.

After ten minutes' immersion they may be pinned up by one corner to dry. The next operation must be performed by candlelight, or, if in the daytime, with a screen of yellow calico over the window.

A few drops of solution A are poured on a flat sheet of glass placed on a level table, and spread out with the edge of a smaller piece of glass to the size of a sheet of the paper previously salted. Then a sheet having been marked at the corner, to show the prepared side, is lowered on the solution, the marked side being downwards. Here it must remain for eight or ten minutes, and can then be hung up in the dark to dry. The photographic paper thus prepared can be kept in a portfolio till required for the frame, and, if properly shielded from the light, will keep good several days.

In taking the copy of a leaf we place it on the glass of our frame, and then the photographic paper, with its prepared side next the leaf. Over this a piece of black cloth is laid, then the back. The cross pieces being inserted, the wedges are pushed up until the leaf is pressed firmly against the paper, when the arrangement will be as shown in the accompanying section.



- A. Staple.
- B. Cross piece.
- C. Wedge.
- D. Back.
- E. Prepared paper.
- F. Glass.
- G. Section through Frame.

The face of the frame is then placed in a strong light, and after a little time the exposed parts of the paper will be found to darken. When sufficiently intense the back is taken out, and the paper (on which is the impression of the leaf), soaked well in solution **B**. After this it must be well washed in water. When dry this can be coloured to nature, or, by using it in the same way as the leaf, a positive copy (dark on a light ground) may be obtained. The veinings should appear beautifully distinct.

In copying an apple or pear the photograph must be taken from a section through the middle.

The use of the hinged back is that we may inspect the process of printing by withdrawing one of the wedges, taking out a cross piece, and raising the liberated end of the back. The other wedge being tight prevents the shifting of the leaf or paper.

In our next we shall speak of coloured processes.—
EDWARD A. COPLAND.

[The writer will be happy to answer, in the pages of THE COTTAGE GARDENER, any questions on the subject addressed to him.]

THE DISADVANTAGE OF MAKING THE ENTRANCES IN THE SIDES OF HIVES.

THERE are two plans usually adopted in making an entrance into a bee-hive; one is by cutting away a portion of the straw, the second by cutting a sufficient space out of the floor board. The former is by far the more frequent practice, doubtless from the circumstance that it is attended with very little trouble to take a knife and cut away sufficient straw; but I do not hesitate to state that the plan is very inferior to the other mode.

The floor boards that I have found most advantageous in practice are made of deal not less than an inch and a half in thickness. The entrance is made by cutting a groove four inches wide from the middle of one side to an inch beyond the centre of the board. The depth of this groove (which is made quite flat and smooth at the bottom) is *exactly* three-eighths of an inch where it is crossed by the edge of the hive when the latter is placed on the board, and it gradually slopes upwards as it goes further into the hive, being scarcely of any depth at the centre, and losing itself in the flat level of the floor board a little beyond. When the hive is placed in its position the entrance is consequently four inches wide and three-eighths of an inch high.

The advantages of this entrance over the common one are these:—Firstly, the hive, if of straw, is stronger and less liable to decay from the straws not having been cut. Secondly, it is much warmer in winter. The tendency of heated air is to ascend, and consequently, when the opening is situated below the hive, there is no escape of warmth; but if the opening is cut out of the side the lower part of the hive is filled with cold air. Thirdly, any moisture which may be produced in the hive by the condensation of vapour readily runs down the incline, and escapes at the entrance. This cannot be the case with perfectly flat boards, and the hives over them are consequently much more damp, and the combs apt to become mouldy. Fourthly, the small height of the opening prevents the entrance of snails or mice, which latter often commit sad havoc in a hive during the winter. Fifthly, the facility with which, by means of wedges of cork, the entrance can be narrowed to any desired degree is a great advantage during the autumn. After the honey season the entrance may be narrowed to half an inch in width, and no wasp can gain admission; and in a good season the entrance may be thrown open to the full width of four inches, as that space is absolutely required when the bees are very busy.

There are other advantages besides those enumerated, such as the greater convenience to the bees in entering, and the greater facilities of access to the spaces between the different combs; but I think these are sufficient to establish the superiority of the plan, which, from practical experience in numerous cases, I can strongly recommend to all bee keepers.—W. B. TEGETMEIER.

IRIS RETICULATA.



PURCHASED at the sale of the late Dean of Manchester.

Of this very curious and beautiful Iris the leaves are perfectly erect, a foot long, one or two to each flowering plant, glaucous, and four-cornered, with a pale, curved, sharp conical point. The flowers are solitary, shorter than the leaves, proceeding from green closely-rolled spathes, from which the angular tube projects from two to three inches; they are of the deepest purple, with a narrow, well-defined, pure yellow oblong spot at the end of the sepals, accompanied by some purple specks upon a paler ground. When brought into a room the flowers remain expanded for some days, and emit a faint but delightful smell of violets.

The plant is found wild in the Crimea.

A hardy bulb, as easily managed as the Hyacinth, growing freely in a compost composed of loam, well-decomposed cowdung, and silver sand. It is increased by the bulbs, which should be kept quite dry when in a dormant state, and afterwards started at different times in September and October, for giving a succession of flowers in the spring.

A most valuable plant for pot culture in the spring, and which may rival all other spring bulbs, not only on account of its brilliant blue flowers, but because of its blooming so

very early without any other protection than that of an ordinary greenhouse, and having at the same time the odour of the violet.—(*Horticultural Society's Journal*.)

NOTES FROM PARIS.

In some places, and especially in the long, spacious street, Rue Lafayette, all the fine young trees have been cut down, and it appears that the authorities intend doing away with trees here altogether, as the pavement is not so wide as on the Boulevards. It has been hinted, however, that some of the Coniferae will be introduced in place of other kinds which do not thrive very well on the promenades.

While on this subject I may just notice that *Platanus occidentalis*, *Pawlonia imperialis*, and *Rhus typhina*, appear to grow with the greatest luxuriance wherever I have seen them: the first in particular is fresh and green long after the more common sorts have lost their leaves.

M. Saint Hilaire, professor of zoology at the *Muséum d'Histoire Naturelle*, has for some time been discussing the merits of horse-flesh as an article of consumption, and he argues strongly in favour of its introduction at the present time, when the ordinary kinds of 'butchers' meat are so dear as to be almost beyond the reach of the working classes.

The learned professor dwells at considerable length on the importance of animal food for the proper sustenance of the human body; and he pays a singular compliment, while on this point, to what is commonly called the "pluck" of Englishmen, whom he contrasts with the soft and effeminate inhabitants of India, who live, he states, chiefly on a vegetable diet.

"Look," says M. Saint Hilaire, "at those people who live entirely on vegetable food like the Hindoos. Their manners are very gentle, it is true, but they are incapable of energy. A handful of Englishmen have subjugated them, and now rule them. Would the inhabitants of India, numbering one hundred and fifty millions, obey a few thousand Englishmen if they nourished themselves as Englishmen do?"

An agriculturist, M. Delpuech, writing in the *Siècle*, remarks, in support of the same doctrine, that when farm labourers and others engaged in out-of-door work consume enough of animal food, they have more courage at their work, they are stronger, and more robust than when they are deprived of it.

Every practical man knows that in circumstances which call for unusual effort, as in hay-making or harvest, the best economy is to spend an extra sum in feeding the work-people, because it is well known that such outlay is amply repaid by a proportionate amount of work.

Except, perhaps, among vegetarians, this proposition would be accepted without proof or explanation. Most people, I should think, in whatever part of the world they live, are quite satisfied that plenty of food is not a bad thing; but M. Saint Hilaire is, perhaps, arguing too much in attributing British dominion in India to so trivial a cause as animal food.

Now, let us hear what is the condition of farm labourers and the peasantry in general throughout France.

According to statistics drawn out by M. Le Play, a great number of the peasantry in France only eat meat once a year, that is, on the day of the *fête patronale** of their commune. Others only eat meat on that day, and also on the first day of Easter, called here *Mardi gras*. In Paris the butchers celebrate *Mardi gras* by making a grand procession, in which a number of oxen are led through the principal streets of the capital with music, and the men and women in fancy costumes. This procession is kept up for three days, and closed by a grand ball.

The great majority of the rural population, about twenty-five millions out of thirty-six millions, is divided by M. Saint Hilaire into three classes, thus:—

1. Those who eat meat at marriage feasts, at Easter, and on the principal fête days, about six times a year.
2. Those who eat meat twice a year, that is, on the day of the *fête patronale* and at Easter.
3. Those who only taste meat once a year, that is, on the day of the *fête patronale*.

But M. Le Play goes further, and says that the great

* The *fête patronale* is a holiday kept in honour of the patron saint of the town or village.

majority of the agricultural population seldom or never taste butchers' meat. M. Saint Hilaire proposes to reduce the present high price of meat by sending all the old horses to the slaughter-house, and it is stated that even now horse-flesh is consumed in Paris to a greater extent than people suppose. M. Lucas, at the Garden of Plants, as well as several other scientific gentlemen, are cited as among the number of those who can testify to its excellent nourishing qualities.

It is also stated that horse-flesh is consumed in several German states, where the horse-meat markets have been quite successful.

It is calculated that, by using horse-flesh, more than 50,624,000 kilogrammes might be yearly added to the quantity of butchers' meat at present consumed throughout the whole of France.—P. F. KEIR.

NATURAL HISTORY OF THE HOUSE MARTIN.

SINCE writing the paper which you inserted at page 86 of the present volume I have, in Southey's "Common-place Book," vol. ii., met with the following, which is quoted by him from Henderson's "Account of Honduras," and which clearly proves that the Martin or Swallow habitually resorts at night to rushes or sedges in watery places, and particularly in hot climates, or in very warm seasons here, as has been the case in the past summer.

"Myriads of Swallows are the occasional inhabitants of Honduras. The time of their residence is generally confined to the period of the rains, after which they totally disappear. There is something remarkably curious and deserving of notice in the ascent of these birds. As soon as the dawn appears they in a body quit their place of rest, which is usually chosen amidst the rushes of some watery savanna, and invariably rise to a certain height in a compact spiral form, and which at a distance often occasions them to be taken for an immense body of smoke. This attained, they are then seen separately to disperse in search of food—the occupation of their day. To those who have had an opportunity of observing the phenomenon of a waterspout the similarity of evolution in the ascent of these birds will be thought surprisingly striking. The descent, which regularly takes place at sunset, is conducted much in the same way, but with inconceivable rapidity, and the noise which accompanies this can only be compared to the falling of an immense torrent, or the rushing of a violent gust of wind. Indeed, to an observer it seems wonderful that thousands of these birds are not destroyed in being thus propelled to the earth with such irresistible force."

I may here remark that Wood, in his "Natural History," says that the Chimney Martin or Swallow builds its nest "with mud against a wall or other convenient situation." Now, this is the manner and situation in which the House Martin builds its nest; but the Chimney Martin or Swallow described by Mr. Wood builds its nest, so far as I have noticed or ascertained, invariably in chimneys.—T. M. W., *Bishop's Waltham*.

NEW AND RARE PLANTS.

HOYA CORONARIA (*Garland Hoya*).

THIS "fine Hoya" is a native of Java, whence it was sent to Messrs. Veitch by their collector, Mr. Thomas Lobb. Its flowers are pale sulphur yellow-coloured. Dr. Wallich found it in Sylhet, and called it, as had Dr. Wight, *Hoya velutina*. It bloomed in November, 1856, at Messrs. Veitch's. In Java it is called *Aroy Kilampahan*.—(*Botanical Magazine*, t. 4969.)

DENDROBIUM HETEROCARPUM, var. HENSHALLII (*Henshall's variety of the various-fruited Dendrobe*).

Two other varieties are figured in the "Botanical Magazine," and a third is known at Kew. This species is found all over Peninsular India from Ceylon to Nepaul, as well as in Java, from whence Messrs. Rollison imported the variety now noticed. Pale straw-coloured flowers, with two crimson spots at the base of the lip.—(*Ibid.* t. 4970.)

EUCHARIS GRANDIFLORA (*Large-flowered Eucharis*).

This is in the collection of Messrs. Veitch under the name

of *Eucharis Amazonica*. Native of Choco, New Granada. Allied to *Eurycles*. Flowers white. Stove bulb, blooming in winter.—(*Ibid.* t. 4971.)

RHODODENDRON ALBUM (*Cream-coloured Rhododendron*).

A native of the Salak Mountains in Java, whence it was sent to Messrs. Rollison, nurserymen, Tooting, by their collector, Mr. Henshall. It bloomed in their stove during November, 1856. Flowers creamy white; leaves underneath very rust-coloured from dense scaliness. It has been called *Vireya alba*.—(*Ibid.* t. 4972.)

CALATHEA VILLOSA, var. PARDINA (*Villous Calathea*; *spotted-leaved*).

Native of Demerara, whence Sir Robert Schomburgk sent roots to Messrs. Loddiges prior to 1843. Its yellow flowers open in a moist stove during the summer.—(*Ibid.* t. 4973.)

BEGONIA MICROPTERA (*Short-winged Begonia*).

Native of Borneo, whence Messrs. Low, nurserymen, Clapton, imported it. Its white, pink-tinged flowers first opened in their stove during the December of 1856.—(*Ibid.* t. 4974.)

ON BEES COLLECTING POLLEN.

We are not only indebted to pollen for all our fine varieties of fruits and flowers, but on it hinges the existence of the "vegetable kingdom;" for, without the influence of that fine dust in the stamens of flowers on their stigmas, the oak, as well as common weeds, must in time cease to exist. It is not, however, our wish at present to enter into this subject, but to notice how bees gather pollen, and for what purpose.

From childhood we recollect the pleasing feeling at seeing bees among flowers with little balls on their legs, which we thought were to make their combs. Then we had not read of bees in windy weather fixing little pebbles on their legs as balance. This fabulous story is, of course, based on bees collecting pollen on their thighs as food for their larva; but we are not aware of any writer who has stated how it is done, and we have often watched bees before we caught sight of this process. When they collect honey from small bell-flowers, especially those of *Asparagus*, their bodies hang down, and the pollen is brushed off the anthers with their fore feet amongst a series of strong, curved hairs on their hinder legs. When the little baskets are full the contents take their round shape, for no pollen adheres beyond the edges.

Bees may collect pollen from other sorts of flowers by some peculiar motion of their legs similar to the jerking movements of the Rose-leaf-cutter bee, when among the stamens of flowers, to make the pollen adhere between the series of strong hairs under its abdomen.

Humble bees gather pollen the same way as the hive bees do; but we have to note a curious squeaking sound they make, especially in single Roses. We doubt, however, whether this proceeds from their mouths or from the movements of their legs obstructing the air holes under their wings; but it is certain that bees do not always collect pollen when amongst flowers, therefore it cannot be alleged that the curved hairs on their thighs act somehow like traps, without the will of the insects.

Bees' bodies often get dusted with pollen, but we are doubtful if ever they afterwards clean themselves by removing it into their thighs. They certainly enter the hive, and issue out again like "dusty millers." The hive bees deposit the balls of pollen by placing their abdomens close to the mouths of the cells, and with their fore feet rub it off into them, pressing the store firmly down with their hinder ones. The stored cells are in the brood combs in the heart of the hive, but in very hot weather pollen is often deposited in honey-combs; therefore, when extracting or parting these, great care ought to be taken not to mix them, for a very small portion of pollen will give honey a bad flavour.

In spring bees collect pollen as eagerly as they do honey, and the Sallow's "downie buds" are among the first to afford a rich supply. This shows the necessity of having it fresh, and is rather against the charge of bees storing up too

much. On this point we have to say that a well-provisioned hive contains about an equal quantity of both stores; but in winter bees cease in a great measure to rear brood, and, of course, use but little pollen. At this time they draw closely together, leaving a great part of it in the combs exposed, by which it turns mouldy. This is also at variance with the opinion of some of our best apiarians, and even once our own—that bees mix honey with pollen, or "bee-bread," to preserve it. Connected with this we have to mention that bees are blamed for not clearing out the old pollen, but "allowing it to accumulate for years, filling up the brood cells." As regards this we are doubtful, at least to the full extent; for when bees take possession of old combs they clean out the cells, and the floors of healthy stock are often dusted with crumbs of old pollen in spring. If this was not the case how could hives be productive for ten or twelve years? Indeed, we question if pollen was as valuable as honey whether such a charge would have been made against bees; and we have now only to remark that there seems little chance of supplying them with pollen by way of feeding; yet we have a faint recollection of being told by the late Mr. Payne, who wrote from his own practical knowledge in these pages, that he once observed his bees scooping out pollen from old combs in front of his hives. That was certainly contrary to their usual habits, for when bees happen to drop fresh pollen at their doorways it is left to be trodden under foot: not so the least drop of honey.—J. WIGHTON.

QUERIES AND ANSWERS.

WALTONIAN CASE.

"I have put up one in my greenhouse, warmed with a gas jet, the fumes being carried off by a pipe. I can maintain a heat of 70° to 75°. Most of my cuttings damp off. That probably arises from inexperience; but those remaining have a sickly, blanched appearance. I fear that the gas smell or fume draws somehow into the case, though I cannot smell it at all. I hope your paper will afford me the experiences of others. Gas is a dangerous gardener's companion."—M. D. P.

[Your case was anticipated last month, and the proper directions were then given from the practice of the original inventor. All that you have to do is to allow much less water to the bed of sand, from which more moisture rises than the confined air at 70° to 75° can "take up," and not to confine the air so much, by having a little air on the case day and night. Is the top of your cutting pots covered with sand? If not, that should be attended to immediately. The best propagators in the London and all other nurseries are obliged to resort to this simple expedient to prevent their cuttings from damping. How much more careful, therefore, ought amateurs to be. But hear the history of the contrivance in a few words. Mr. Walton never struck a cutting before he invented this case for himself, and through all his experiments in bringing it to perfection he never lost one single leaf from damp. Every case for the last twelve months has been made to the eighth of a fraction on the model of Mr. Walton's own case, which he considers the best, and the manufacture has been all along in the hands of two men. A master carpenter does the woodwork, and one of Mr. West's foremen fits the heating apparatus. All that Mr. West does to them is merely to prove them in his own greenhouse. Mr. Walton is a true specimen of the thorough English gentleman, and we all know what Mr. Beaton is, the sponsor to the invention. Both of them know the parties who finish these cases to be as worthy of trust as any tradesmen can be, and that is intended by the latter as an answer to a gentleman at Leamington.]

EVERGREEN CLIMBERS FOR A WALL.

"H. W. requires three evergreen climbers for a west wall (situation South Derbyshire), and will be obliged by the names of the best."

[The *Japan Honeysuckle* is the nearest to an evergreen climber which is worthy of a wall, and, we believe, is the only evergreen climber in England which is worth a west

wall in South Derbyshire; but scores of evergreens can be trained against a wall, though they are not climbers. About Bath the *Cotoneaster microphylla* is so trained against houses, and makes the richest "evergreen climber" we have, and the hardiest; and *Magnolia grandiflora* is the best of the three for a wall. Our *Félicité Perpétuelle* Rose is now quite green, and has been all this winter, and also our *Renoncule*, and both might be used to cover walls, together with *Noisette* Roses while the evergreens were young.]

ANNUALS FOR MASSING.

"Will you kindly say what sorts of annuals, as regards harmony in colours and otherwise, best suit for massing in a bed of a pretty large size, in a flower garden where there will be three or four such beds of annuals, and a good many beds of the usual kinds of bedding-out plants?"—A CONSTANT READER.

[Yellow is the prevailing colour of the very few annuals which are fit for massing. There are two shades of yellow in *African Marigolds*, the best yellow annual for the centre of a large bed like yours, and there are three shades of yellow and brown in the *French Marigolds*; but the exact tint can never be depended on for a mass unless the kinds are kept from cuttings—a difficult thing; therefore common *French Marigolds* are not well suited for masses, in which clear, clean colours are the chief beauty; but there is a very dwarf yellow kind of *French Marigold* to edge a bed with, or for filling small beds; but in large masses this kind is intolerable, although it comes true from seed. The best yellow annual for a mass of the second degree, or middle height, is *Tagetes tenuifolia*, a botanical *Marigold*; and the best yellow annual of the third degree, or lowest, is *Sanvitalia procumbens*. All the *Marigolds* tell best in single masses by themselves; but the *African* would make a very good centre to a band of three or four feet wide of *Sanvitalia*. None of the *Coreopsis*es do for beds by themselves, because they do not last out the season. *Drummondii* is the best of them, and the longest that will keep in flower; also the best style of yellow bed. Its clear, clean, large flowers are far before *Sanvitalia*, which has the best style for a bed in other respects. There is no scarlet, or purple, or crimson annual for a large bed; nor a white one—only pink, blue, and yellow, *Saponaria Calabrica* being the pink, and one of the very best bedding plants where it does well; but it should be a very large bed—a circle four to five feet across is quite large enough. The next best pink, or near to pink, is *Viscaria oculata*, two sorts, one eighteen inches to two feet high, and a dwarf kind of it nine or ten inches high. They last over two months, more or less, according to the season, soil, and time of sowing. Blue is the last and the best for very large beds, tall *Lupins* in the centre, *Cruikshankii* for the very centre, *Hartwegii* round it, *pubescens* round that, then a few *Corn-flowers* and branching *Larkspurs*, with *Chinese Larkspurs* or *Lupinus nanus* round the outside. But a very good large bed might be made of blue *Lupins* for the centre, three rows of *African Marigold* to make one band round the *Lupins*; to sow this band with *Coreopsis Drummondii*, to bloom before the *Marigolds*; and the front with *Sanvitalia procumbens*, eighteen inches wide, next to the grass or gravel. A row of white *Virginian Stock*, sown four inches from the grass, would do till the *Sanvitalia* crept over it by the end of August.]

TO CORRESPONDENTS.

CITROVILLE.—Does this differ from the common Pumpkin? If it does the Rev. T. Fox, jun., Shillingstone, Blandford, Dorset, would be glad to purchase seed if he knew where to apply.

LIME TREES (*Arthur Du Cane*).—They are not prejudicial to the health of the neighbourhood where they grow, nor did we before hear of such a suggestion.

SITUATION FOR GREENHOUSE (*Rebecca*).—There can be no doubt that A, as marked in your plan, is the best situation for the greenhouse; and it might be rendered a very ornamental object when looked upon from the house. If to have the greenhouse adjoining the house is a paramount object, then D is the only situation permissible, and that is bad enough. The west end of the house would be better.

GARDEN PLAN (*A Subscriber*).—Yours is a very pretty garden, without pretension; but who knows which are the most suitable flowers for

a stranger? If the garden was ours we should have a row of old plants of *Punch*, a scarlet *Geranium* in front of the centre bed all round the evergreens, and a row of *Calceolaria rugosa* close to them, and next the grass. 1 and 4 we should have in different kinds of scarlet *Geraniums* mixed, not in rings; 2 and 6 we would have in three shades of yellow, all *Calceolarias*—yellow, nearly yellow, as *Shankleyana*, and yellow brown; and 3 and 5 would contain a collection of the very best variegated *Geraniums*, edged with deep blue *Lobelias*; but, most probably, all that you will learn by this is a sad disappointment. Tastes differ.

MOTION OF SAP (*An Inquirer*).—It begins to move in the stem and branches first.

FILTERING RAIN WATER (*E. Talbot*).—If you will procure through your bookseller our 13th number, price 4d., you will have the description and drawings of a very simple mode of purifying the rain water from your roof. It is a plan still satisfactorily in use.

THE POULTRY CHRONICLE.

MR. HEWITT AND HIS CALUMNIATORS.

"You have so completely judged the case of Mr. Hewitt and myself, in disregard of my assertions, for authority for which I have referred to witnesses at least as credible and respectable as any upon whose testimony you have formed your conclusions, that I regret that I cannot address you as other than a partisan, and therefore beg to state that I consider your extracting from my correspondence such portions as you considered advantageous to his cause, and suppressing others containing my indignant refutation of counter imputations of complicity, to be an unwarrantable proceeding.

"Had you given me an opportunity of satisfying you that the charge was made against Mr. Hewitt by Mrs. Sharp I could have done so; and, painful as it is to contradict a lady, I am obliged to state that a more unprincipled denial never was given, for I assure you that this loquacious lady, proud of the audacity of her charge, was a perfect lionne at the Prescott Show, repeating her statement from time to time during the afternoon with wonderful fluency. Indeed, even so lately as the Preston Show, she gave the same version to a noble exhibitor in my hearing. It is, therefore, as ridiculous for her to disown it as for Mr. Hewitt to say that he did not hear it, as I have asked my informants within the last few days, and am assured I have not been led into error.

"My opinion of Mr. Hewitt I am unable to alter, and it is this: if his sympathies be not with Mr. Chune, and he does not know this exhibitor's fowls when he sees them in show-rooms, so improper have been his awards that he is incapable of judging *Hamburgh* fowls, and, therefore, ought not to assume the responsibility of the many classes comprised in a first-class exhibition. I am obliged to him, however, for his tenderness to my 'personal degradation,' and therefore beg you to assure him that I do not feel it.

"It is too much for a 'self-convicted and down-fallen adversary,' as Mr. Hewitt is pleased to call me, to expect that you will insert his letter; but, if inconvenient to do so, oblige him by not using your editorial scissors to it, and ever believe him,

"Your grateful Servant,

"WILLIAM C. WORRALL."

[We are not partisans of Mr. Hewitt, but we are partisans of justice and truth. If Mr. Hewitt could be shown to be a partner in the ownership of any birds to which he awarded prizes, we should condemn him as unreservedly as we condemn those who brought against him the charge, without stopping to inquire whether there was any real foundation for that charge. The evidence produced to sustain it has not only not sustained it, but has proved that there was no ground for the accusation. It matters not, so far as Mr. Hewitt is concerned, whether Mrs. Sharp ever said what she is alleged to have said. If she did say so she now denies it, and thereby confesses there was no truth in what she said.

We must decline any controversy with Mr. Worrall. He knows as well as we do that the passages we omitted in his letters were totally irrelevant to the charge against Mr. Hewitt. We have the means of showing the letters to any one who may feel curious to see them entire, and have no objection to so doing. They will only serve to demonstrate still more forcibly that Mr. Worrall has not acted temperately, or wisely, or justly; and no unbiassed person will give any other judgment than that. It would be more manly for Mr. Worrall to acknowledge he had been misled than to

deny Mr. Hewitt's competency as a judge of Hamburgs, which, even supposing it to be true, has nothing to do with the libel.—Ed. C. G.]

CHARACTERISTICS OF GAME FOWLS.

THE discussion now going on in your columns on Game fowls cannot fail to be productive of good, and of the elucidation of many a dark point. There will, nevertheless, always be two opinions; one held by the mere lover of beautiful birds, and the other by the amateur who scans them only for the pit. While, in common with many others, I shall be glad to glean every information, I think it is a pity to make rules too stringent, as they only discourage many when they find their pets are not exactly what older fanciers require. Again, in many counties it is with Game as it is with other breeds—there are diversities of opinion on certain points. I was told, and I believe it is correct, that the second prize cock at the Crystal Palace was one of the Birmingham prize birds. I always feel diffidence in criticising the Game decisions, because the Judges have the opportunity of handling, and I hold it to be impossible to judge a Game fowl without that ordeal. I think the nutmeg is not a bad description of the *Duckwing* hen, coupled with a salmon breast, and many old breeders and amateurs are loud in their assertions that yellow legs are essential to this breed. I join in blaming a spangled breast, and I am a great lover of a copper saddle.

The willow-legged birds are certainly the favourites in the south country, and I infinitely prefer them, or slate-coloured blue, to white or yellow. The white legs in a Game fowl have an appearance of poverty and softness which does not accord with the character of the bird. I cannot go with "NORTH COUNTRY" in fancying the produce from blue and yellow legs to be olive; it may have happened sometimes, and the idea is artistic. My notion of Game fowls is, that any coloured leg is correct, provided all in the pen are precisely similar. No one would accuse "NORTH COUNTRY" of being a disappointed exhibitor, and the good reasoning and real knowledge in his letter entitle him to thanks and respectful attention.

"NEWMARKET" is a worthy pendant, and his description of a Game fowl is very good. He gives, however, a heavy weight for symmetry when he says 5 lbs., or 5½ lbs. If this is to be the weight the Judges must incur the censure of "NORTH COUNTRY" by looking for the heavy birds. I have seen the weights of two mains fought at Knaresborough 130 years ago, and out of sixty cocks only three weighed 4 lbs., the average being 3 lbs. 10 oz. I always look with suspicion on Grey Duckwings, thinking there is a stain in them, and the hens shown in these pens often fortify the doubt.

It is certain that much crossing has taken place among Game fowls. Some owners have bred for colour; some for size; others have used a cock on account of his fighting properties. The Piles, for instance, were all made; and one of them, renowned for hard fighting and activity, the Cheshire Pile, has disappeared. I quite agree with "NEWMARKET" about the yellow-tinged skin; the flesh is white, and has more Game flavour than any other; and I also prefer the cream-coloured egg.

I differ from him only on one point. I do not think it would benefit shows, or lead to satisfaction, to appoint a known old breeder to judge these classes. They are most of them very strongly biassed in favour of some particular strain, and very often are crotchety on some points.—W.

CHARACTERISTICS OF SUPERIOR CANARIES.

AN inquirer, signing himself "C. C.," and perched in a quiet corner of your periodical of the 24th of February last, asks, as a brother fancier, for the required points of prize birds in the Belgium varieties, and also to have pointed out the merits of the successful birds at any of the late Canary Exhibitions. I select Nottingham and its vicinity, as not only the head paradise of Canary birds, and which, as an able correspondent observed, "for half a century has been the English Belgium, the great centre from which most of

the best birds in England have emanated," but also as the source from which the inquirer, and all others concerned in this interesting portion of the animal creation, may rest satisfied that, whatever opinions may have been hitherto entertained by the fanciers in this country respecting the properties of first-class Canaries, the united voice of the great breeders here has now established as a law the following points as necessary to constitute a first-class, and, in the existing state of ornithology, a perfect Canary bird:—

YELLOW AND BUFF CLEAR BELGIUMS.

These are judged according to the following properties:—

- 1st. Small, flat head.
- 2nd. Good neck, long and slender.
- 3rd. High, square shoulders, vulture-like.
- 4th. Good circle back, well filled.
- 5th. Neatness, closeness, and length of tail, inclining in circle with the back.
- 6th. Neatness, thinness, and length of bird.
- 7th. Legs and thighs for length and erect stand.
- 8th. Closeness of feather.
- 9th. Richness of colour.
- 10th. Best standard properties as a combined whole.

JONQUE AND MEALY LONDON FANCY BIRDS.

These are judged for the following properties:—

All the minor points have long passed away, and the most difficult thing to attain receives the highest order of merit. Colour is the only point looked to, and that for *quality* and *quantity*, both for Jonque and Mealy. Blackness of feather is only referred to when the colour is equal in two birds; the blackness of feather then decides it. The Mealy birds should have a pure white mealy tip at the point of the feather, with the rich, pure yellow underneath, which gives them an additional beauty, and carries out the mealy principle. The cap is the *first point*; then breast; then saddle and back. Cap, saddle, and back will beat breast. Cap and breast beat saddle and back; but breast, saddle, and back beat cap, although cap is the first property; but, as I stated before, if a tie, it is then decided by the wings and tail for blackness.

GOLDEN AND SILVER-SPANGLED JONQUE AND MEALY LIZARDS.

These are judged according to the following properties:—

- 1st. Cap for colour, magnitude, and regularity.
- 2nd. Colour for richness of yellow, not only in the cap, but throughout the bird.
- 3rd. The cap must come to the eyelash, and no lower. If the eyelash is not dark it is not so good as if it was dark.
- 4th. Wings and tail black home to the quill.
- 5th. Spangles for distinction, the golden preferable.
- 6th. Size for largeness and elegance of shape.
- 7th. Pinions for magnitude and regularity.
- 8th. Fair breast and regular.
- 9th. Legs for blackness.
- 10th. Flue for blackness.

YELLOW ANTWERP BELGIUM VARIEGATED.

The dark- or yellow specimen of the Antwerp Belgium Variegated Canary, with the manner in which they should be marked or pied when quite perfect, and as approved by the *Société de la Concorde*, held at Antwerp, Brussels, and Ghent, are—

- 1st. The top of the head and cheeks black green, very regular.
- 2nd. From the under part of the beak, breast, and down to the vent to be perfectly clear and clean, and not to be tinged with any other colour.
- 3rd. From the back of the neck down to the saddle or loins to be perfectly clear and regular; that is, "handkerchief backed."
- 4th. The three or four flight feathers of the wings upon each side to be white; all the rest, up to the eighteenth, to be black green.
- 5th. The tail, if totally black green, is much preferred; but if regularly marked with one, two, three, or four feathers black green, provided they are perfectly regular, and the same number upon the outer side of the tail, to be always considered a good show bird; and the same rule to hold good with the number of white feathers in the wings.
- 6th. The legs to be black. The richest bird in this as in the following class to be always considered the best if

regularly marked, and to be judged by the best Belgium properties.

In the Mealy Variegated birds an allowance to be made for the colour of the green.

This specimen is always considered the most beautiful, and generally preferred.

LIGHT OR BUFF OF THE FOREIGN BELGIUM VARIEGATED CANARY.

The points in this, approved as before stated, are—

1st. The head to be very regularly but lightly marked on the front, but not on the back, and upon each side of the cheeks, with green.

2nd, 3rd, 4th, and 6th rules of this class correspond with the second, third, fourth, and sixth rules of the dark specimen above mentioned, making an allowance in the fourth rule in colour for the Mealy specimens.

5th. The tail if totally white preferred; but a bird with one, two, or three feathers dark, provided the number is the same on the outer side of the tail, to be always considered a show bird; and the same to hold good as to regularity of number of white feathers in the wings.

JONQUE and MEALY GOLDFINCH MULES and JONQUE and MEALY LINNET MULES are judged for the best resemblance to the Canary properties.

The foregoing points and properties are those which the eminent Judges at the late unrivalled Exhibition of Canaries at Nottingham considered to be necessary to constitute a first-class bird. Although few were quite up to the mark, yet the merits of those birds which were the fortunate competitors possessed the nearest approach to this standard of perfection.

The admiration this department of the Exhibition commanded, and the generous patronage it received, will, I hope, encourage the fancy in this country to persevere, create in them a love for these harmless pursuits, and make the study of Nature more popular.

The second general concourse of the Canary bird fanciers of the United Kingdom will be held at Nottingham, I understand, in the month of January next; and I trust that this first effort to introduce so novel and highly interesting a feature into Poultry Exhibitions will merit the approbation and support of the community.—A FANCIER, Nottingham.

MARCH PREPARATIONS FOR CHICKENS.

HAVE a shed, sheltered from cold wind and open to the sun, ready for the chickens that will now be coming out. The floor of it should be covered with dry, fine dust. It is most important, if possible, to have no old fowls with the chickens. They often give them unkind pecks that tell in after life, and they steal the dainty food prepared for the young broods. The mother being under her rip is unable to protect them. For winter exhibitions the April and May chickens are preferable to earlier ones. Let your chickens be on the grass when it is dry and the sun is out; but do not expose them to the unkind easterly winds.

As usual at this time of the year, amateurs are beginning to ask themselves why their eggs hatch badly, and we think we can give a word of comfort.

Recollect it is very early—long before the natural season for hatching. If left in a natural state hens would no more have brought out chickens yet than other birds have young ones.

You may also console yourself by remembering that, for all winter shows, your April chickens will beat your earlier ones; for some breeds even May is soon enough.

"FEATHERS AND FOOLERY."

SOME short time since a paragraph, with the above title, went the round of the London and provincial papers, containing a statement that at a certain show, which was named, there was a pen of birds valued by the owner, who was also named, at £1000. This was evidently intended to throw ridicule on Poultry Exhibitions generally, and, doubtless, was not altogether an unsuccessful attempt with those who were not acquainted with the arrangements of Poultry Shows;

but poultry amateurs would at once know that the price simply was meant as a prohibitory one, the owner not wishing to sell his birds. It is difficult to conceive what object the Committees of Poultry Shows have in making exhibitors thus stultify themselves by placing ridiculous prices on birds they have no wish to part with, or what objection they can have to the more truthful and honourable statement of, "Not for sale." As a continuance of the plan may very possibly lead to a repetition of the paragraph, I beg to suggest that a slight addendum be so made to it to signify that the feathers only belong to the exhibitor, and that the foolery, which gives rise to such a ridiculous statement as £1000 for three fowls, is entirely the property of the Committee.—EXCELSIOR.

ANTIQUITY OF NAMES OF POLISH, HAMBURGHES, & DORKINGS.

I SELDOM pass a book-stall without inquiring for old books on my favourite hobbies, viz., poultry, pigeons, or bees, inasmuch as I hope to render my collection in these subjects eventually a complete one.

In an old work on "British Housewifery," published in 1748, I found the following names given as those of varieties of fowls, namely, Polands, Hamburgs, and Darkings. There was not any description of the first two, but the Darkings were evidently in high estimation at that period, as, in addition to a chapter on fattening and caponising, there was a letter from an inhabitant of Darking who had been requested to furnish particulars respecting the breed. The writer described them as being large and short legged—did not allude to their toes—and stated that those who were most choice in breeding for colour bred from a white cock and speckled hens. I mention these facts to show that the name of Polands, as applied to fowls, is not so recent as has been supposed; that Hamburgs existed at that period; and that there were then, as at present, White and Coloured Dorkings.—W. B. TEGETMEIER.

OUR LETTER BOX.

PULLET WITH HALF AN INCH BROKEN OFF THE BEAK (G. S. S.).—The broken beak will grow again; but, during the time of its being imperfect, the fowl should be fed on soft food *exclusively*, which should be placed in a small, deep vessel, and in small, crumbly masses.—W. B. T.

FLOOR OF PASSAGE FOR POULTRY (C. L.).—A concrete, or stone, or brick, or boarded floor are all unexceptionable for your purpose, whichever is cheapest. We do not like the concrete made with gas tar for fowls until it has been laid a long time.

LONDON MARKETS.—MARCH 16TH.

COVENT GARDEN

A week's fine weather has improved our supply, and also our trade (for we are proper fine-weather birds in Covent Garden); but we have nothing particular to report. Some new *English Grapes* are to be had, and there is, also, good *Barbarossa* offered for sale, that now fills up a vacuum we experienced in former years between the retarded and the new *Grapes*. Good *Dessert Apples* very scarce. *Potato* trade dull; prices somewhat lower.

POULTRY.

Good poultry is becoming scarce, but there is an ample supply of an inferior quality. The London season already feels the effect of political excitement, and the trade is dull.

Large fowls.. 6s. 0d. to 7s. 0d. each.	Widgeons.. 1s. 6d. to 1s. 9d. each.
Smaller do..... 4s. to 4s. 6d. "	Teal 1s. 6d. to 1s. 9d. "
Chickens..... 4s. to 5s. 0d. "	Pigeons 10d. to 11d. "
Goslings .. 8s. 0d. to 8s. 6d. "	Rabbits.... 1s. 5d. to 1s. 6d. "
Ducklings.. 5s. 0d. to 5s. 6d. "	Wild ditto..... 10d. to 11d. "
Guinea Fowls 3s. 0d. to 3s. 3d. "	Hares 3s. 0d. to 3s. 3d. "
Wild Ducks 2s. 3d. to 2s. 6d. "	

WEEKLY CALENDAR.

D M	D W	MARCH 24—30, 1857.	WEATHER NEAR LONDON IN 1856.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
24	Tu	Tuberous Moschatel (Adox).	30.144—30.007	45—36	E.	—	55 a. 5	17 a. 6	5 37	28	6 22	83
25	W	LADY DAY.	29.909—29.828	43—35	N.E.	—	53	19	sets	29	6 3	84
26	Th	Sengreen (Chrysophyllum).	29.879—29.852	42—29	E.	—	51	21	7 a. 29	1	5 45	85
27	F	Golden Saxifrage.	29.884—29.873	51—21	N.E.	—	49	23	9 3	2	5 26	86
28	S	Chickweed (Stellaria medi).	29.979—29.913	47—29	N.E.	—	46	24	10 37	3	5 8	87
29	SUN	5TH SUNDAY IN LENT.	30.232—30.144	44—17	E.	—	44	26	morn.	4	4 50	88
30	M	Great Stitchwort (Stellaria).	30.243—30.212	52—15	E.	—	42	27	0 10	5	4 31	89

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 51.6°, and 32.9°, respectively. The greatest heat, 75°, occurred on the 27th, in 1830; and the lowest cold, 14°, on the 25th, in 1850. During the period 120 days were fine, and on 76 rain fell.

ORNAMENTAL GRASSES.

GYNE'RIUM ARGE'NTEUM.

(PAMPAS GRASS.)



THIS gigantic Grass—for Grass it is, though there is some doubt as to the genus to which it belongs—is to be arranged in the *Diœcia Diandria* Class and Order of the Linnæan system. The generic name is derived from *gyne*, a female, and *erion*, wool, referring to the woolly appearance of the stigma. The specific name, *argenteum*, silvery, alludes to the silvery whiteness of the flowers, a whiteness arising from their colourless glumes and

scales, and from the similar absence of colour from the long hairs by which they are accompanied.

The popular name is singularly inapplicable, for it is found in no part of the Pampas. This name is likely to mislead the cultivator, for the soil and climate of those vast plains, the Pampas, are peculiarly dry. So far, however, is the *Gynerium* from delighting in dryness, that we are informed that it is only found on the banks of the Parana, and other rivers of South America.

The roots are wide-spreading, numerous, and fibrous. The leaves are from six to eight feet long, though not half an inch broad, hard, spiny-saw-toothed at the edge, very rough, and of a dull grey green colour. Flower-stem from ten to fourteen feet high, cylindrical. Flowers in a much-branched panicle, forming brilliant plumes from eighteen inches to two feet and a half in length, all of a silvery whiteness. The flowers are in perfection during October and November.

This noble Grass was known to botanists early in the present century; but its introduction into cultivation in our gardens is of very recent occurrence, and is entirely due to David Moore, Esq., superintendent of the Glasnevin Botanical Garden, Dublin. He received seeds some time in 1848 from Mr. Tweedie, of Buenos Ayres, who had gathered them in South Brazil. Mr. Tweedie described it as “the most showy plant of any class in this country (Brazil) when in blossom, appearing like white sheets hung on poles, and is seen at a distance of many miles. It likes a cool clay soil.” That it is so hardy in our climate, although a tropical plant, is not surprising, since several botanists state they found it growing in the Cordillera of the Andes at elevations 12,000 and 14,000 feet above the sea’s level.

It is a perennial, and bears a full exposure to the winter even in the latitude of London; but in that latitude Messrs. Henderson, of Pine Apple Place Nursery, find it advantageous, when the autumn is ended, to tie the leaves together around the heart of the plant, and to envelope the whole in a mat. The mat may be opened on all favourable occasions, and entirely removed by the end of March. This covering preserves the centre of the plant uninjured, and enables it to produce its flower-stems earlier.

If raised from seeds, these should be sown early in March in pots well-drained, and then filled with a compost of equal parts peat and sandy loam. Cover the seeds very slightly, and do not give water for a few days, but afterwards water freely. The pots must be

put in a warm pit or house, but be moved into a temperate greenhouse when the plants are well up. When large enough put the plants singly into small pots. At all times keep the soil very moist. In December shift into eight-inch pots, but still keep the plants in a coolish greenhouse. As the roots fill the pots continue shifting into larger pots, always using the compost already mentioned, and always supplying water abundantly. In May the plants may be removed to the open borders, mixing some leaf mould or very decayed hotbed dung with the soil before planting. Form a deep basin, with its side extending all round the plant at a distance of two feet from it; put some manure in this basin, and supply it freely with water at all times of the plants' growth, unless rain renders it unnecessary.

SPRING PROPAGATION.

THIS is the best time of the year for people who get into new places, whether they be masters or mistresses, handy men or first-rate gardeners, to learn the real capabilities of their conveniences for supplying the flower garden, and if they forget to make the necessary memoranda of failures, and of each degree of failure and of success, they will lose another season of their lives without being much the wiser than they were this time last year.

How did the *Verbenas* do this winter in your new pit? Any mildew, or black insect, or dying off at the surface? How did the *Lobelias*, the *Anagallises*, the *American Groundsel*, the *Mignonette*, the every one and all of the families you cultivate, grow or keep in winter? All the capabilities ought *now* to be memorandumed, and plants of all that have been lost must be bought-in without loss of time; but do not jump out of the frying pan into the fire with your eyes wide open. Order only such plants as were propagated before the middle of last August, and are now fit to use for cuttings at once. I recollect losing all my blue *Anagallises* one winter, and writing up to London for a couple of plants of each sort, the small old blue, the *grandiflora*, and the one called *Phillipsii*, just half a dozen in all; but in the hurry of business the nurseryman forgot to tell his foreman of this department that I had lost all my stock of those plants, and if you believe me I did not know whether to laugh at my own folly or at their stupidity, or to sit down and have a good blubbering, at having lost another week of propagation, for the six *Anagallises* they sent me were only six cuttings just rooted. I shall never forget it, and you may profit by my disagreeable fix. Twelve shillings a dozen for established plants at this season is more economy than to get newly-struck plants of the same kinds for half-a-crown.

But to return to the capability of the new pit, the turf pit, or the contrivance for keeping plants in winter. I wonder if the Messrs. Low, of Clapton, have lost any of their 500,000 in those cold pits I reviewed last autumn. I wonder, also, if they saved coverings by shutting in sun heat in these cold pits in frosty weather. Not they, indeed, you may depend upon it; for, if they did not know better in olden times, they have read *THE COTTAGE GARDENER* from the beginning, in which every one of the writers insisted, over and over again, on the impolicy of the "moon philosophy." Mr. Barnes first, and Mr. Robson after him, told us how frosted Cauliflower plants, Strawberries, and all the rest of *their* tribes ought to be dealt with. Mr. Errington is as regular as the seasons, or like "a good house clock," as he once told me, in his advices, of which airing

things has had a large share. Mr. Appleby the same; but it is to Mr. Fish that you are all indebted for the right theory of ventilation at all seasons of the year. As for your humble servant he only hits the nail at the right time of the year; but the subject was among the very first things I learnt on gardening. Mr. Niven, then the most scientific gardener on the other side of the Grampians, introduced "this way" to the neighbourhood of Inverness as early as 1823 or 1824. The father of the present curator of the Royal Botanic Garden at Edinburgh was the next with whom I had seen the practice in 1827 and 1828; but he practised that way of giving air for more than thirty years before that. But let us say the practice was well known to some of the best gardeners in Scotland at the end of the French war at Waterloo in 1815. Mr. Sharpe, gardener to the Earl of Eglinton, and the writer kept a journal of the way the air was managed for the Heath houses in the Edinburgh Botanic Garden during the winter of 1827 without being once inside the garden. We could see all the glass in the Botanic from our bedroom windows in the Experimental Garden at Inverlieth. According to that journal the houses in *our* Experimental were aired this last winter, and with good effect; but if you want the reason, one thousand of our readers could give it to their cost this very day. It is to keep plants in winter from insects, from mildew, from going black at the collar while the roots and tops are good, and from damping off, that is, all kinds of bedding plants; but if you go higher or lower in the scale of ornamental plants we must add to the list of mishaps that of causing greenhouse plants to grow lean and lanky, and not able to flower one-half according to the size. But Mr. Fish put this point often and often in a better light than any previous writer. He said again and again, in effect, that "the mere extension of the shoots is not always to be taken for lawful or legitimate growth. If growth is encouraged in the absence of air and light, or of a sufficient quantity of both to ripen, or organise, or solidify the said growth, it is worse than useless—it deceives those who do not understand the difference between lawful and unlawful growth, so to speak." November is, perhaps, the worst time in the year to begin to force a plant into growth whose nature is to commence growth only in the spring; but for one whole generation, at least, November was the time for beginning to force Grape Vines, *but not St. Peter's*. Well, what is or was the process in this beginning of Vine forcing? The very process which we now call the moon philosophy when it is applied to plants which are intended to be at rest at that season. Take special heed of this, for it is on this very point that all the law and philosophy of plant management hinges. The Vine forcer has found, by long experience, that the most exciting thing and the safest thing to move the sap, which is naturally at the lowest point of movement at the time, is to shut up the Vinery early in the afternoon of sunny days. All the fires and hot water in the world are not to be compared to sun heat for early forcing, whether his plants be in leaf or not. Therefore, supposing we were ignorant of the facts, can it be argued that the very self-same process is also or equally beneficial to plants which we wish to be perfectly at rest? and the more perfectly at rest the better returns they make us next season. On the contrary, is it not more likely that closing in sun heat with plants at rest is the very worst thing in the world for them, on account of its tendency to excite them into unlawful growth? "But my plants look well under the system for all that," exclaims green philosophy; and this "*looking well*" lies at the root of almost all the evils to which plants are subject. *Looking well in winter, in nine cases out of ten, is only another name for mismanagement.*

I kept about 2000 plants in my little conservatory

this last winter, and I cannot say that a single plant of them looked well or half well for fully four months, and some of them would have looked "shocking" to many of my neighbours; but just take one instance. Mr. West, who makes the Waltonian cases, is "no gardener." Mrs. West is the head gardener of the firm, and manages the conservatory capitally. I took him to look over my collection in the dead of winter, and I shall never forget his remark. "Well," says he, "if those who read your writings were to see this *poking* way of having plants you might shut up shop, for no one would believe a word of what you said;" and yet, all the time, my plants were in the best state for them and for me. I lost none, or "none to signify," and *now* I would back them against England, France, and Germany.

You recollect my telling last winter how the different plant houses in the nurseries stood, or were kept at such and such temperatures. That would have been a grand lesson to gardeners did they not know the thing as well, and many of them better than any one else; but the lesson I intended for another generation of gardeners, the bee-like swarms from the "hives of industry" which took their flight down the lines, and rested on every bush and tree, hedge and down, within miles of the stations. I knew the steam was up with them, and that some of them would go ahead faster than was "lawful" for their fostering cares; therefore, after telling them of the lowest point of winter heat for such and such plants, I warned them particularly against the moon philosophy of giving and taking off air. We know that all animals and all plants require periodical rest. No one doubts that; but rest comes in *different ways* to man according to his exercise, and in *different temperatures* to plants according to their natures. The nature of the best bedding plants yields to a few degrees of frost, and they perish; but keep them above the freezing point, and they are safe on that score. Give them a different, a higher temperature, and they are equally safe from death, but they are not at rest as they ought to be; and what is here safe is very wide of being natural, and therefore not good for the plants, notwithstanding their good looks. Oaks and Elms do not look well in winter; but they do better than if you covered them with glass, and so managed the temperature as to make them look well in the eyes of moon philosophy. They have their rest in winter, and stand all winter frosts. Geraniums do not stand frost, and they rest a little above the freezing point. Other plants rest at 40°, some at 45°, at 50°, or 55°, some at 60°, and some as soon as they are at 65°, like Mr. Veitch's Asiatic *Vandas* and such plants. If you now begin at the bottom of this scale, and alter the natural degree at which any of the sections are properly at rest, you disarrange their economy, and in the proportion you derange this, in the same proportion will they yield their fruit, and you may call the flowers "the fruit" of bedding plants.

If I was writing out an act like an Act of Parliament for keeping bedding plants in winter, and all other plants which *ought* to winter at the same temperature as bedding plants, I would make the preamble or introduction run thus:—"Whereas these and all like them do rest in winter, by reason of their nature, at a temperature fluctuating from 34° to 40°, and seeing there are only two seasons in the plant year, the summer and winter, let it be enacted that the winter season commences for plants at the termination of the autumnal equinox, and ceases on the turn of the vernal equinox." Then the first chapter of the act would prohibit any sun heat to be used for warming the air among such plants between these periods, and the next and last chapter would go to sanction all lawful means for borrowing sun heat in such and such degrees as experience has taught to be best suited for the gentle rise and progress of the sap, and for the

maturity of the "fruit" required, whether that fruit was seeds, roots, leaves, or flowers.

The act has been in force in some parts of Scotland, as we have just read, since 1815; but, like some other very good acts, it has been a dead letter in many parts of the kingdom, or queendom, from that day to this. See, therefore, if it was not rather from infringing on some clause of this act than from the capabilities of your new place, and all about it, that you lost so many of the bedding plants this winter. At all events make a memorandum of all you lost, of what is now but middling, and of the prime lots, if only to see the difference this time next year, after a more natural system of resting the stock next time; and in the meantime resolve to have an extra number of plants of all the kinds that failed last winter before the propagating season is over, in order that you may be able to keep some of them in pots all the summer for stock plants the following season, which brings us round to the point from which we started.

Well, how is the propagation going on this spring? We are first-rate at the Experimental so far, with the hotbed system in full force. The covering over the dung is three or four inches of finely-sifted coal ashes and dry, old, dusty tan. The heat is good, steady, and mild, from 65° to 75°. There was too much steam or smokiness at first to allow of closing the lights entirely, and when that happens the remedy is to have a little air on at the back, and more by night than during the day, because there is no way of consuming the smoke at night as the sun does, so to speak; but from the first the smell was quite sweet. I think the cinder ashes help to fix the bad smell and keep it down. They certainly keep the tan from getting too wet, and the tan keeps the ashes from getting too dry, and the whole is so porous that the heat rises freely and very steadily. Large 60 and small 48-sized pots are what we use for the cuttings, and we only put one row of cuttings round a pot, with clean sand on the top, and a very sandy compost below. The smoke or steam was all gone before we ventured to put in seed pots; but we force all the hotbed seeds in the cutting bed.

The Horticultural Society gave us a packet of seeds of the *Lobelia ramosoides*, a plant which I often said never seeded at all; but we shall soon see the "rights of it." One of their packets last year made a new bed for us; but I could not tell of it as I lost the name. We have it again this season, and it is a new kind of *Viscaria*, called *Burridgii*, the same as *oculata*, except the colour of the flower, which is the very rarest tint we have—a real lavender colour, or say about four degrees lighter than the colour of *Plumbago Capensis*. Ladies are very fond of this delicate tint, which the sun, or rain, or wind did not affect to the last. It was sown in the open ground on the 5th of March, last spring, and the seedlings transplanted in May, at eighteen inches apart, over a bed of *Mangles' Variegated Geranium*. The two agreed well, and there was no blank when the *Viscaria* was over. D. BEATON.

MANCHESTER BOTANICAL AND HORTICULTURAL SOCIETY.—It will be seen from an advertisement that this Society has made arrangements for various Exhibitions this summer, in connection with the "Art Treasures Exhibition," and much will it add to the attractions. Exhibitors already promising to send flowers and fruit include some of the principal nurserymen and private gardeners in this country and on the Continent. To the Exhibition of American plants Messrs. Waterer, Mr. Baker, Mr. Cunningham, and others, will contribute. Its extent may be estimated from the statement that the tent will be 240 feet long, and sixty feet wide.

THE DAHLIA AND ITS CULTURE.

(Continued from page 413.)

SHADING THE BLOOMS.—This is absolutely necessary with many varieties. It has the effect of bringing up the centre of the bloom before the back or guard petals fail. The best shade I ever saw was one made of wood in the form of a small box, with one side glazed, and hung with hinges to open. It was secured to a stake to support it the proper height. The bloom was placed in the box through this glass door, and a slit made in the bottom. There it stood sheltered from the burning rays of the sun, from heavy rains and blustering winds, in a snug haven of rest. This shelter, however, is rather expensive. With stake and box they cost about 1s. 6d. each, but then with care they will last several years. Other shelters may be adopted, such as common garden pots set on a thin circular board, with a slit half way through it to guide the bloom to the centre. This is supported, also, by a stake thrust into the ground, having the board nailed to it; the pot is then inverted over the bloom. This answers pretty well, but the colours are not so clear and bright. Thin turned iron bowls are sometimes used, supported by a stake through the centre, with good effect; but they are rather inconvenient, because the blooms cannot be so easily observed. Then, again, shelters formed in the same shape with wire, and covered with oiled canvass. These are the next best, in my opinion, to the glazed boxes, and are much cheaper. These shelters, whichever are adopted, need not be applied till the blooms are half expanded. The best formed and most double blooms should be chosen to be sheltered, where they may remain till wanted for exhibition.

INSECTS.—All this care may be useless if the insects that prey upon this fine autumn flower be not destroyed. In the young state the *common garden slug* or snail preys upon the young plants. These may be destroyed by frequent waterings with clear lime water, and a circle of fresh quicklime laid round each plant will prevent their travelling to the plant. I have found, also, rough coal ashes a good preventive. But the most destructive insect is the *earwig*. This insidious enemy travels about during the night, feeding upon the tender, juicy petals, spoiling, by his nibbling, the best flowers, descending to the earth as soon as light appears, and hiding himself there till the approach of the shades of night. This hiding propensity or instinct may be taken advantage of by providing a retreat for him, entrapping him, as it were, to his destruction. An old expedient is to place a small quantity of moss or short hay in small garden pots, and invert them upon the stakes. Every morning these are examined, and the hay or moss shook over a pail of scalding water. In some seasons many hundreds may thus be destroyed. Hollow garden bean-stalks, a foot and a half long, placed among the branches, form a fine hiding-place for these insects. These should be taken gently in hand in the morning, and the insects blown out into scalding water. The best trap, however, for these pests is one invented by Mr. Edwards, a figure of which is given in *THE COTTAGE GARDENER*, Vol. XVI., p. 122, and may be had of any respectable nurseryman. When this invention is better known it will be universally appreciated by all growers of the Dahlia. Even all these traps may be insufficient to prevent the ravages of these insects. A last resource is to go out two hours after dark with a lantern, and examine every flower. The nocturnal marauders will be found at work feeding, and may then be easily captured and destroyed.

Another destructive insect is the *thrips*. This pest sucks out the colours from the petals; even pure white blooms are discoloured and made dirty by them. I am obliged to confess that there is no known agent which will destroy them. Long-continued dry weather is most favourable for their increase. Hence the only remedy

we can apply is copious syringing over the entire plant, flowers and all. This will tend to check their increase; and, by untiring perseverance in syringing, the thrips may be kept under till the autumn renders the operation unnecessary.

PREPARING FOR EXHIBITION.—My short essay would hardly be complete if I did not add a few lines on what I consider the best plan of conveying blooms to the exhibition, and, when arrived there, placing them on the stage. It is absolutely necessary to have a box made for that purpose, with the lid loose to lift off. The lower part should be made so as to hold a certain number of tin tubes fixed firmly to the bottom. These should be water-tight, and should be filled with water. They should be placed at such a distance from each other that each bloom will not touch its neighbour. Cut the blooms late in the evening before the day of exhibition, or, if the distance is not very great, they may be cut very early in the morning with the dew upon them. This will keep them quite fresh till they are placed on the stage. Have a number of corks ready that will fit the tubes, bore a hole through each, and draw the stem of the bloom through this hole low enough to be immersed in the water; then carefully press the cork into the tube. If the flower-stem does not fit the hole tight wedge it in with paper. A box may be made to hold twenty-four blooms, but one or more to hold twelve blooms each is preferable. Two may be placed together to make a twenty-four stand. It is desirable to have a few extra blooms in an extra box to supply any that may be spoiled by the carriage. The lid should be so made as not to touch the blooms. In such boxes blooms may be conveyed in these railroad days a hundred miles in perfect safety.

WINTER TREATMENT.—This includes cutting down the plants, drying and storing away the roots, and examining them occasionally to see the state they are in.

I always kept a stock of late-struck plants in pots on purpose to preserve them through the winter. I found this the most certain way of preserving alive any scarce or new variety. As soon as the frost had killed the tops I had them cut off, and the pots placed in a dry room till the soil was quite dry; I then laid them on one side under a greenhouse stage, or in any dry place where the frost could not reach them. By this plan I scarcely ever lost a plant, however small the tubers were. Such as are grown in the open ground should have their tops cut down after the first frost, and the roots immediately dug up. If allowed to remain in the ground the roots, being yet in action, send up a large supply of sap, which flows out of the just cut top, causing it to quickly decay downwards even to the bulbs, and often destroying the incipient buds. By taking them up the flow of sap is prevented or cut off at once; then take the further precaution to hang them up, roots upwards, in a dry, dark shed. The remaining sap in the green stems will then drain off the superfluous sap, and ripen as it were, and thus keep more certain through the winter. This taking up should, if possible, be done after a few days of dry weather; the roots will then rise clear of soil, and be ready to put away much sooner than when taken up wet. I have tried many ways and many places in storing away the roots when they were in a properly dry state, and have come to the conclusion that the best plan is to lay them on one side in a dry, low room (not a cellar), and cover them over with dry hay or close, short straw. This I removed and renewed afresh every five or six weeks. By this plan I scarcely ever had a mouldy or rotting root. If such an one did appear I instantly removed it, washed it quite clean, cut away all decayed parts, and dried it well and replaced it. Of course those that I took such pains with were either first-rate ones or very scarce with me. When

I had plenty of any variety I threw all such decaying roots away at once. Every time I removed the covering above mentioned I made a close inspection, and sought all decaying and mouldy roots, to prevent the infection from spreading.

TREATMENT OF NEW VARIETIES PURCHASED OF THE DEALERS.—A safe plan with these plants, as soon as they are received, is to repot them and place them under glass for three weeks, watering them freely, and giving plenty of air till they have become strong, good plants. This help to their progress assists their growth much quicker than planting them out at once when received. If the plants are rather tall and spindly the top might be taken off and put in as a cutting, which duplicates the stock and does the plant no harm, provided there are several leaves left on it below the cut.

I will give a list of varieties in my next.

T. APPLEBY.

(To be continued.)

GUNNERSBURY PARK.

THIS seat of Baron Lionel de Rothschild was honoured recently with a distinguished notice by the press. The marriage of Miss Leonora, the eldest daughter of Baron Lionel, to Baron Alphonse, the eldest son of Baron James Rothschild, of Paris, was the cause. Although the description of the wedding repast, the wedding cake, the bridal presents, the plate, the jewellery, the marriage ceremony, &c., was interesting to many, nevertheless I felt disappointed when I read that "the walls were covered with large mirrors, with ornamental trellis-work between, up which were twined long garlands of artificial Passion Flowers, Lilies, wreaths of Orange blossoms, and other emblematic Flora suited to the occasion." As I had the pleasure of seeing the place on the 2nd inst., the day before the wedding, I am induced to inform the readers of THE COTTAGE GARDENER that *living plants and flowers*, Nature's choicest productions, contributed most materially to beautify the scene, and that on such an occasion they were most poetically and appropriately introduced.

"O lovely flowers! the earth's rich diadem,
Bright resurrection from her sable tomb,
Ye are the eyes of Nature—her best gem!
With you she tints her face with living bloom,
And breathes delight in gales of rich perfume;
Emblems are ye of heaven, and heavenly joy,
And starry brilliance in a world of gloom;
Peace, innocence, and guileless infancy,
Claim sisterhood with you, and holy is the tie."

In the grand portico, adorned with columns of the Tuscan order, large specimens of Camellias, Azaleas, &c., were tastefully arranged. In all the rooms, flowers—living flowers—in recesses, on chimney-pieces, in vases and baskets, on ornamental stands; in short, in every place they were the most prominent and conspicuous objects. In the dining-room a large recess was filled with the choicest plants in flower, surmounted by a vase, also filled with flowers, and backed by a large mirror. The walls were covered with large mirrors, which gave a multiplied reflection of all the wonderful things the rooms contained.

The more general adoption of mirrors would be useful as a means of increasing the pleasing effects of plants in a conservatory. At Thornwood Lodge, Campden Hill, upon entering the conservatory attached to the house, ocular demonstration is given of the variety, magnitude, and multiplied views produced by mirrors, and reflected from several parts of the drawing-room.

A list of the plants in flower and arranged through all the rooms at Gunnersbury Park would comprise a great variety of greenhouse and stove plants, with some rare Orchids, and the more general assortment of bulbs, including several varieties of Amaryllis in full bloom. In the extensive forcing department the fruiting Pine plants were in most luxuriant health, planted out on the Hamiltonian system, and the succession plants in large pots. The Vines in pots, some trained upwards from the bottom of the Vinery, and another set on a shelf at the back, and trained downwards on the wires under the rafters, were

showing eight, and some ten, good-sized bunches. The pathway of another house was an arcade of Cucumbers, besides the Cucumber pit, where fruit in all its stages was to be seen, and from which fruit had been cut for several months. The Peach house, divided into two compartments, is about forty-two yards long and five feet wide, heated by hot water; the fruit in the earlier house is thickly set and swelling to a good size. French Beans and ripe Strawberries were abundant. The productive and healthy state of the fruit trees and plants, and the general good order and system kept up through every department of the gardens, commend Mr. Forsyth, the head gardener, as one of the go-ahead sort, best qualified to carry out all modern and improved systems. —WILLIAM KEANE.

BROCCOLIS WHICH HAVE WITHSTOOD THE LATE SEVERE SEASON.

I QUITE concur with the remarks of Mr. R. Errington, in his history of the Broccolis, at page 390 of March the 10th COTTAGE GARDENER. He seems to think the name in part should indicate the character and habits of the variety; for, as he remarks, they should not have such vague names as *Dilcock's Bride* or *Waterloo White*, without their habits and season being explained.

If I am not mistaken the last autumn and winter have well confirmed that, as to durability and hardiness, few, at least in this neighbourhood, and generally in Scotland, can boast of having been much benefited by Broccolis, particularly the *Cape* varieties.

Snow's True Winter, or rather, *Early Autumn*, is a splendid Broccoli, being of a good colour and compact shape, but I find it extremely tender—more tender than any Broccoli I ever grew. The *Capes*, I think, are a little hardier; at least, I have grown a variety for the last twenty years under the name of *Gillespie's Grange's Cape*. I crossed it with an *Early Spring White*; since then it is scarcely so early, but much more hardy. I have generally found the *Cornish* or *Cornwall Broccoli* to be a useful variety, but this winter it has dissolved away as if it had been a pulp of soft matter, and several other varieties have shared the same fate.

I have a variety which originated from the *White Malta*, an excellent White Broccoli, crossed with an *Invisible Heading*. It is coming in now. The head is white, and enveloped or covered by a lot of small leaves, which quite protect the heads.

I have been an enthusiastic Broccoli grower for many years, always trying to improve them, and I have found, as Mr. Errington remarks, that Broccolis are very liable to sport; therefore, if it is wished to have a variety perfectly true, as it should be, each distinct sort should be out of bloom before another comes into bloom.

The only other variety I have that has stood the winter is the variety lately published in this paper, raised by me under the name of *Melville's Dwarf White May*. I can vouch that not a single head has failed of it under all the severe and variable weather we have experienced. I, in a measure, attribute its standing to being dwarf. I consider a great deal of injury is done to our Broccolis from the frost operating on the stem or stalk. All Broccolis, I think, intended to stand the winter, if not lifted and laid down, should have the earth drawn up to the lower leaves, but not farther, so that the water may pass away from the *axils* of the leaves, where it might lay much, to the injury of the plants.

I have frequently planted alternately one row of Broccoli and one of Cauliflower, to allow, after the Cauliflower is cleared off, ample room for a free circulation of air, and at the same time an ample supply of earth is at hand to earth up the Broccoli to the leaves with. I have invariably found Broccoli to stand the winter best when not planted thickly, so that a free circulation of air might pass through them.

As the late autumn and winter have been so prejudicial to all vegetable crops in Scotland—even the hardy Scotch Kale has been destroyed in many places—the question is suggested, Is there no substitute hardier than the Curled Kale? I know one even better, and could forward you a sample; indeed, Mr. Beaton has seen it. I forbear naming

it at present, for fear I might be judged as writing to promote my own purposes; but the great disappointments sustained in the failure of vegetables have caused me to pen these remarks, hoping some others will name what they have proved to be good and hardy, as well as what have failed the most with them in the past rigorous season.—WM. MELVILLE, *Dalmeny Park Gardens*.

NOTES FROM A SMALL GARDENER.—No. I.

It may be of use to some of your readers to have a good winter-flowering scarlet Geranium for a greenhouse, and I recommend *Reidii* above all others. Let me also advise a bed of *Alonsoa Warscewiczii*. When pegged down it is first-rate from the first week in June to the middle of October if the seeding stalks are kept picked, and it is a strong grower.

Tell your readers not to be misled by any Rose fancier's controversy, and, in consequence, to give up growing the *Géant des Batailles*. There is none equal to it for flowering perpetually from the second week in June till nearly Christmas, and though it fades soon its buds are lovely.

Let no one neglect a supply of perennial *Phloxes*. They come easily now from cuttings, and all through the season can be struck in a bed under a hand-glass. Few perennials equal their beauty, and they are quite hardy, and give no trouble; while in blossom (and they remain so for some weeks) they cannot be too much admired. If you like I will give you a list of the best and hardiest.

I saw, the other day, a capital way of making a frame for tying *Azaleas* round when coming into blossom. A stout stick in the middle, and through holes in the top galvanized iron wire, bent in a conical shape to about three inches over the edge of the pot, then turning up and inserted round the edges. It never rusts, takes up a tenth of the room of stakes, and may be painted green so as not to show. It is also very cheap.—NOTA BENE.

[Pray prolong your notes.—ED. C. G.]

ON GRAPES LEFT LATE ON VINES.

Good Grape growers seem to differ in opinion respecting the effect of Grapes being left to hang late on Vines; but from my own practice, and observation of that of others, I must say that the Vines take more or less harm according to the length of time the fruit is upon them, and the temperature of the house.

The common opinion that the fruit cannot do harm after the Vines have shed their leaves and gone into a state of rest has but little foundation; for if the house be kept only moderately warm the Vines do not become so in the strict sense of the word. This is easily ascertained by cutting off a few shoots, and leaving these to hang with the bunches upon them; for the berries will soon shrivel up, and become inferior to the general crop. This not only shows that the fruit draws some little nourishment from the Vines, but also agrees with our knowledge that fruit trees make fresh roots or fibres during mild winters; and perhaps all sorts of deciduous trees do the same. Hence the plan of transplanting them early in autumn.

But there is yet a greater evil, especially when the fruit is on the Vines until the spring, which is that the pruning is retarded, and thus the Vines are more apt to bleed. Moreover, they are injured by having been deprived of their proper time of rest. This last is not the least drawback; indeed, I may safely say that Vines thus treated take more harm than early-forced ones. These certainly have more rest, and I need hardly state that such is not only more conformable to the habits of Vines, but of all forced fruit trees, which require a sort of winter's repose.

In making these remarks I am well aware that there is no other plan of keeping Grapes so well as that of letting them hang on the Vines, and that they are often of more value than early ones; consequently, the best way is to keep the house as cool and dry as possible, and to keep pruning the Vines as the crop is cut—I mean all shoots

without fruit—and finish with the knife as soon as the crop is done; then throw the house open, in order that the Vines may still have a chance of some repose during our cold spring weather.—J. WIGHTON.

A SKETCH OF THE DUKE OF DEVONSHIRE'S GARDENS AT CHATSWORTH.

EMBOSOMED amid towering hills and beautiful valleys lies the object of our present notice, Chatsworth, the seat of the greatest patron of horticulture, and one of the most illustrious of its votaries. It is situated on a sloping declivity at the base of a range of rugged and romantic sandstone hills; and viewed from the summit of one of the lofty ranges that bound the view, especially the north-west, Chatsworth House appears to be placed almost in the centre of a rich valley, through which winds the river Derwent, and from this valley diverge various other valleys, almost equalling it in extent and beauty. The princely mansion that occupies and completes this picture of the splendid and peculiar scenery of the Peak is not so much, however, the special object of our attention, for we fear the poet has too often sung its praises to leave us a hope to accomplish anything worthy of it in prose; and we have only to add that, however we may be tempted, an attempt to describe it would be contrary both to the spirit and letter of what should constitute the writer of "a sketch of the gardens at Chatsworth."

These, with the many attractions they present in a horticultural point of view, together with the noble scenery by which they are surrounded, draw annually an immense number of visitors, to whom, thanks to the generosity of his Grace the Duke of Devonshire, they are freely thrown open; and although not exactly a visitor I cannot do better, in giving a description of these interesting grounds, than to follow the route of an ordinary visitor to them. The starting point in our tour, therefore, is the Orangery. This, the connecting link, as it were, between the horticultural and domestic establishments, is a fine and spacious room or building, combining somewhat in its architectural details the appearance of the one, but occupied, of course, solely by the appurtenances of the other. It is 27 feet in width, 21 feet in height, and 108 feet in length. The Orange trees, of which there are a considerable number, appear in excellent health, and are loaded with fruit. Some of the finest of these trees were imported a few years since from the Continent, where they formed part of the once famous collection of the Empress Josephine, at Malmaison. Several fine plants of the Norfolk Island Pine (*Araucaria excelsa*), and a few others are worthy of notice. This house is also decorated with some splendid statuary, and a magnificent vase in the centre.

Leaving the Orangery by a flight of steps, we notice, stretching along the margin of the broad walk or drive running parallel with this front of the mansion, a row of *Araucarias*, varying from seventeen to nineteen feet in height, alternating with each of which are fine marble figures on pedestals. The whole of the *Araucarias* are protected, at present, by a circular framework, neatly covered or thatched with branches of Spruce Fir.

Turning to the left we pass the structure known as the Temple, and enter the precincts of the glass wall. This fine conservative wall, a delightful promenade in wet weather, has a nearly southern aspect, and effectually screens this part of the ground from the keen north winds. It is some 330 yards in length, 16 feet in height, and 7 yards in width, and is divided into 11 panels, the central one, 22 feet in height, forming an elegant entrance. The wall is covered with various beautiful climbers—Myrtles, Oranges, &c.; and the sashes are removed in summer, which tends much to harden and invigorate the plants within.

Beyond the end of this wall is an immense plant of the *Wistaria Sinensis*, eighty-four feet in the spread of its branches, and with a trunk approaching that of an ordinary upland tree. Between this wall and the house are various beds and borders, gay during the summer with dwarf Roses and bedding plants.

Passing some beautiful specimens of art in marble, with which, indeed, the whole of the grounds are liberally em-

bellished, we reached the Camellia house, certainly one of the oldest greenhouses we remember having ever entered. It is a most curious and antiquated structure, carrying us back, in its heavy and cumbersome details, to days long prior to those of Miller or Abercrombie. It, no doubt, at one time constituted the principal, and, perhaps, the only greenhouse of the Dukes of Devonshire, or might have been graced, for aught we know, by the presence of the ill-fated Mary Queen of Scots, once an inmate of the mansion. At all events its gloomy and antiquated appearance forms a striking contrast to any other horticultural building at Chatsworth. It is chiefly filled with Camellias, now mostly in bloom, and surrounded by an edging of other plants.

In front is a highly ornamental geometrical garden, curiously decorated with pillars surmounted with statuary, some immense Chinese porcelain jars, a figure or two of Isis and Osiris of Egyptian extraction, and several other curiosities worthy of attention.

Proceeding from this interesting spot over an extensive lawn, commanding a beautiful view of the house and hills beyond, we reach the foot of one of the most magnificent and romantic series of cascades and falls in Great Britain. Here Nature and Art revel in luxuriance, and, blended together by a nice combination of both, produce a grand and imposing effect. From the summit of a richly-wooded hill, some hundreds of feet in height, and nearly a quarter of a mile distant, commences this succession of sparkling falls, and terminates immediately at the feet of the visitor. Falling first over natural rocks and projections for a considerable distance, the water is then conducted by an artificial aqueduct of several arches of great height to form a fine fall, and it again appears at a distance below in all directions, both internal and external, from a curious temple, through the mouths of immense dolphins, sea-nymphs, urns, &c., and forming in front of it two jets of spray not unlike waving plumes, or the drooping crest of a guard of honour. The pressure being great, the water, in passing through the numerous jets of the temple, becomes a complete mass of feathery spray and foam, and from it descends, for about 300 yards, a succession of steps in a perfect river, and is eventually lost or ingulfed below the roadway. No lover of the beautiful in Nature or Art can leave these falls without a lively impression of their picturesque beauty and happy effect.

From thence we pursue, by an agreeable walk, our route in the direction of the conservatory to a part of the grounds furnished with rockwork upon a scale not hitherto attempted or equalled elsewhere in the kingdom. We halt a moment, however, before approaching it, for we must not forget the "Weeping Willow" which so much amused Her Majesty when a child at Chatsworth. The tree in question is a very good imitation of a Willow, which, from its somewhat singular appearance, seems to invite inspection. The incautious inspector of an apparently dead tree, however, will soon, to his cost, in all probability, if he approaches it, perceive indications of its undoubted vitality and weeping abilities, not only from above, but by an appropriate and corresponding root action from below, and a complete drenching, or a decided bolt, inevitably follows. The tree has a very pretty effect when playing, and is often the cause of considerable amusement.

But we are now entering the boundaries of the rockwork, which, says a celebrated writer, "is certainly upon the most stupendous scale of anything of the kind in the world;" and its wild and natural aspect, aided by the shrubs and creepers with which it is in some parts overgrown, gives it an appearance worthy of a rugged Alpine glen; or, as it has not unaptly been said, "it appears as if Sir Joseph Paxton had, by some supernatural means, cut out a slice of one of the Derbyshire hills and transferred it to the spot." We pass, on our way to the conservatory, immense, and what would seem almost immovable masses of rock of great height, weighing unknown tons, and in one or two places with waterfalls over them, all disposed in the most wild and natural manner, whilst fine trees of Beech, Lime, Oak, &c., fringe the back and occupy the foreground; and, indeed, we should say, the grandeur of the whole can only be properly appreciated by a personal inspection.

Through all this splendid scenery we pass to the "colossal conservatory," and, quitting the delightful walks of the rockwork by a rustic stone arch, we find ourselves immediately

fronting the building which, until the erection of the one at Kew, stood alone in its magnificence in the world. Its length is about 282 feet, breadth 120 feet, and height 64 feet. The roof is on the ridge-and-furrow curvilinear principle, and its foundations are on arches. Upon entering this vast and gorgeous building we at once find ourselves transferred, as it were, into the tropics. Down the centre runs a spacious carriage-drive, and on either side wave the varied botanical treasures of a tropical clime, whilst at the east end a perfect thicket of Bamboo appears as luxuriant as if enjoying an Indian sun. Bananas, Palms, and tropical trees and plants of all descriptions form, in the broad borders on each side, the carriage-drive, groves which, for height and beauty, almost vie with the luxuriance of the forests of the torrid zone. On each side of the building a stage, a yard or more in width, is devoted to a collection of Ferns, Cacti, and the smaller stove plants. A balcony at a height of twenty-five feet runs entirely round the building, and is approached through a quaint and rugged mass of rockwork, densely covered with curious and beautiful creepers. In walking round this gallery a good view of the Palms and other plants may be obtained. The ventilation is secured by iron valves in the arches of the basement wall, again round the galleries, and occasionally by ventilators at the top.

We cannot undertake, nor would it be advisable, to describe individually the immense number of plants in this building. We will, therefore, only mention a few of those most deserving of notice. For instance, to the left upon entering is a magnificent specimen of the *Araucaria Brasiliensis*, its top touching the roof, and further on an equally fine specimen of the American Cedar (*Cedrela serrata*). The *Podocarpus latifolia* is the finest specimen in England; *Bombax aculeata*, Silk Cotton tree; an immense and noble plant of the Australian Palm, *Corypha Australis*; *Sabal umbraculifera*; *Phoenix dactylifera* and *syvestris*; *Lantana Borbonica*, or Bourbon Palm; *Caryota urens*, East Indian Wine Palm; *Arenga saccharifera*; *Cocos plumosa*; *Musa Cavendishii*, Chinese Banana; *Musa paradisiaca*, Plantain tree, and others; *Jambosa vulgaris*, Rose Apple, now in fruit; *Encephalartos pungens*, Caffre Bread, now in flower; and *Cycas revoluta* in fruit, are all worthy of notice. Here, too, are some splendid plants of *Brugmansia Knightii* and *sua-veolens*; *Chrysophyllum Cainito*; *Cinnamomum verum* and *Zeylanicum*, the Cinnamon tree; *Dracena tuberosa*; *Dombeya versicolor*; *Agatophyllum aromaticum*, or Madagascar Nutmeg; *Supindus saponaria*, Soap tree; *Aralia papyrifera*; *Nephelium Longana*, Litchi, and a multitude of other rare and fine plants that we have not either space or opportunity to mention. An abundant supply of water is laid on, and can be thrown by its own pressure to any height or distance required. The conveniences for heating the building are also perfect, and the smoke from the furnaces, which are approached by a subterranean passage, is conducted by a similar one to a considerable distance up the hill into the hanging wood.

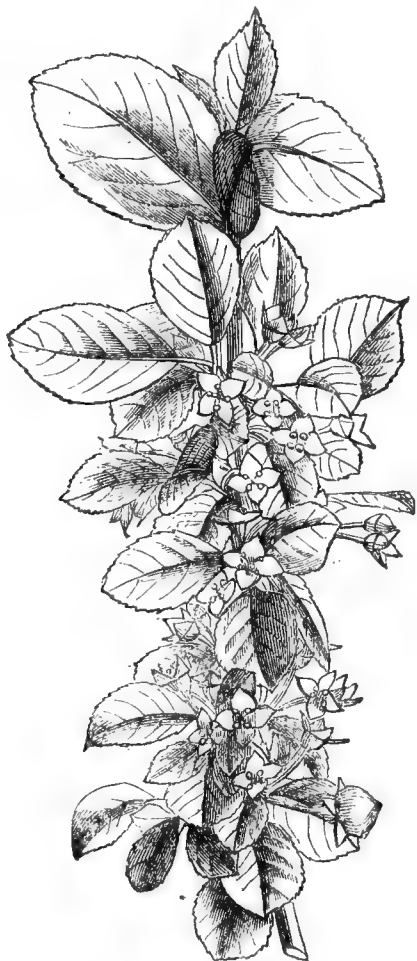
Leaving this splendid structure and its interesting contents by an elegant Grecian archway, we ramble on towards the Pinetum, not generally shown to visitors; and as we follow the beautiful winding walks, which afford an occasional and delightful glimpse of some piece of lovely landscape scenery, we come to a halt in our route, to view for a moment a monument, dear alike to the lovers of classic learning and the collectors of the antique memorials of a classic age; we allude to a pillar, ornamented at the top by a bronze bust of his Grace the present Duke. The pillar once formed part of a column of the Temple of Minerva at Athens, and from its lofty height proudly overlooked for ages the mariner on the Ægean Sea. It is now placed in a delightfully retired spot, and around its base are some beautiful and appropriate verses; but we must not forget the Pinetum. This occupies an extensive space of ground, well stocked with Pinuses, Abies, Cryptomerias, Deodars, Araucarias, &c.; some good plants of *Picea nobilis*, which have ripened their cones; fine ones of *Abies Canadensis*, *Pinus Douglasii*, and an abundance of Araucarias; and last, but not least, the *Wellingtonia gigantea*, of which there are a number of specimens. The Pinetum is apparently well situated, and the whole of the younger plants appear promising.—J. H. C.

(To be continued.)

VARNISH FOR RUSTIC GARDEN SEATS.

A LADY writes to us as follows:—"First wash the woodwork with soap and water, and when dry do it over on a hot, sunny day with common boiled linseed oil; leave that to dry for a day or two, and then varnish it once or twice with what is commonly termed 'hard varnish.' If well done it will last for years, and will prevent any annoyance from insects."

RHAMNUS CROCEUS.



RAISED from seeds received from Mr. Hartweg in January, 1848, and marked "a dwarf evergreen shrub, near the seashore, Monterey."

A small evergreen bush, first described by Mr. Nuttall, who found it on bushy hills and in thickets near Monterey, and who describes it as "a much-branched thorny shrub, with yellow wood; the whole plant imparted a yellow colour to water. Leaves about half an inch long, lucid, when dry of a bright yellowish brown beneath; petioles about one line long. Fascicles 2-6-flowered; pedicels as long as the petioles. Sepals ovate, with one middle and two marginal nerves. Stamens nearly as long as the sepals. Ovary ovate. Styles often distinct below the middle. Fruit greenish or yellowish, usually (by abortion) one-seeded. Seed with a longitudinal furrow on one side."

In the garden it proves to be a neat small-leaved evergreen, which, if hardy, would be a useful shrubby plant; but near London it is tender. It flowers in June.—(*Horticultural Society's Journal*.)

HYACINTH SHOW AT EDINBURGH.

THE first grand Exhibition, open to the United Kingdom, for the improvement of those harbingers of spring, was held in the Music Hall, George Street, on Tuesday, the 10th instant, and surpassed all expectation, by the number of flowers brought forward and the excellence of their cultivation.

It is only a few months since the first idea of getting up a Show of this kind was contemplated by C. R. Sewewright,

Esq., and the successful result promises to be the opening up of a new era in our floricultural prospects. Never before was such a display of Hyacinths in this country. Tables encircling the immense area of the Hall were crowded four or five deep, intermixed with specimens of Azaleas and other plants, presenting a perfect galaxy of beauty. The very atmosphere was saturated with the perfume of Hyacinths; and although all the attractions of these gay, decorative plants had hitherto failed to beguile our fancy, owing to their want of natural gracefulness, we confess we felt on this occasion no small admiration, and forgot the defects of stiffness and formality so peculiar to the Dutch taste and character.

Mr. Cutbush, from Highgate, the successful exhibitor at the London Meetings, kindly honoured us with his presence; and, although his plants were somewhat inferior to those of his northern rivals in point of cultivation, he surpassed them by a well-chosen selection of varied colours, and great praise is due to him for the interest he has manifested in carrying out the objects of the Society.

The first prize for eighteen varieties grown by nurserymen was gained by Messrs. James Dickson and Sons, Edinburgh, the sorts being *Charles Dickens*, single blue; *Lord Wellington*, single rose; *Grand Lilas*, single light blue; *Prince of Waterloo*, double white; *Nimrod*, fine single light blue; *Laurens Koster*, double dark blue, one of the finest of its class; *Alba Superbissima*, single white; *Miss Ainsworth*, single rose; *Norma*, single rose; *Porcelaine Sceptre*, single light blue; *Grandeur à Merveille*, single white; *Orondatus*, single light blue; *Triomphe Blandina*, single white; *Lord Wellington*, double pink; *Voltaire*, fine single white; *Grande Vidette*, single blue, always good; *Prince Albert*, single crimson maroon, almost black, a very distinct variety; and *Emicus*, single white.

The second prize was gained by Messrs. W. Cutbush and Son, of Highgate, in whose collection were the following beautiful sorts not included in the last list:—*Solfaterre*, fine single red, distinct; *Circe*, shaded scarlet, finely shaped; *La Joycisi*, single white; *La Tour d'Auvergne*, fine double white; *Cavaignac*, single red; *Blocksberg*, very fine single blue; *Queen Victoria*, single white; *Baron Von Tuyl*, splendid single dark blue; *Maria Stuart*, single white; *Robert Steiger*, crimson scarlet; *Waterloo*, single red; and *Mrs. B. Stowe*, single red.

The above varieties, particularly those gaining the first prize, were very generally distributed, and seemed to us as a fair criterion of the best sorts exhibited.

Prizes were also given for "ladies' hand-bouquets," the best of which came from Mr. Buck, of Covent Garden, showing his admirable taste in this fine art, the colours being harmoniously arranged, soft, and delicately blended.

Numerous articles were sent for exhibition, amongst which was a magnificent collection of stove plants, mostly with variegated or singular foliage, furnished by Mr. Thompson from the gardens at Dalkeith Palace. From Mr. Lockhart, gardener, Arniston, came a noble specimen of *Pultenaea subumbellata*, measuring fully three feet in diameter, and clothed with a perfect sheet of blossoms. Dr. Knapp exhibited very fine pots of the lovely little *Iris reticulata*, one of the prettiest plants of early spring (see COTTAGE GARDENER of last week), *Erythronium dens-canis flore albo*, and *Scilla Sibirica*. A remarkably fine specimen of *Epacris Christonsi* was sent by Mr. Sewewright, which we are told is the original plant raised some years ago in this neighbourhood. It resembles *E. hyacinthiflora* in form; the flowers are large, brilliant crimson scarlet. A beautiful stand of Rhododendrons (cut blooms) was sent from Mr. Laing, gardener to the Earl of Roslin, Dysart House, amongst which we noticed *R. Javanicum* and several early-flowering hybrids well suited for forcing that have been raised under his care.

The tables to the right and left of the entrance-hall were occupied by nurserymen for exhibiting improved horticultural implements, seeds, fruits, &c., and amongst the novelties Mr. Henderson, gardener to his Grace the Duke of Athol, Dunkeld, showed numerous patterns of his patent brooms for cleaning grass lawns, carriage-drives, &c. These were composed of birch, wire, cocoa-nut fibre, &c., varying in form from round to broad fan-shaped, and are highly commended for their lightness and the facility with which the materials

can be renewed. Few implements are more really useful about a garden than a good broom, and it was with great satisfaction that we examined the invention of this worthy horticulturist, feeling more forcibly than before that he is the most practically useful man who neglects not the *every-day duties of his profession*.—JAMES RAE, *Edinburgh*.

QUERIES AND ANSWERS.

EASING THE SLIDING OF WINDOWS.

"Please say what is the best thing to put on hothouse sliding windows to make them run easily. They stick with the damp. Our man put soft soap, but that has made it worse."—A. ZEBB.

[There is nothing we have found better than soft soap, or even common soap, which, by the way, we like better. We fear your sashes want easing with the plane. If the wood is at all new, or much moisture has been used in the house, they sometimes swell so much that nothing but the plane will ease them.]

SUBSTITUTE FOR BENDS IN HOT-WATER PIPES.

"The glazed stoneware pipes will do very well; indeed, I do not see why they should not supersede iron pipes altogether. The cost is not one-fifth that of iron. They will give out the heat more equally, and are less liable to become leaky at the joints than iron. I have used them as a substitute for lead soil pipes with the greatest advantage, and when I erect a greenhouse I shall use them instead of iron."—ABEL NOTT.

[We have nothing to say against such pipes—quite the reverse; but certainly, if we had iron pipes for a house, we should never think of having earthenware pipes for elbows. We do not see how they can give out heat more equally, or be more sound at the joints, than iron. The first heating by hot water we ever saw was done with earthen pipes of a common kind, and they were so liable to accidents that they were soon replaced. The strong glazed ones are a different thing, and we would as soon use them as iron on a level surface, where no great pressure was on them, and where anything like fair play was given them. In giving bottom heat, where often a great pressure of water is on the pipes, we should rather be afraid to use them; but for greenhouses, and even Vineries, where water circulates on nearly the level of the boiler, it is quite different, and for such purposes it would be worth while for the makers to turn them out in six-feet and nine-feet lengths. We are obliged to our friend Abel, and no doubt many amateurs will be.]

PEACH-HOUSE ARRANGEMENTS.

"Will you kindly furnish me with information on the following subjects?

"1. Having a Peach house with a back wall nicely built with bricks without plaster, would it be the better plan to nail the Peach trees to the wall, and train them, as they are generally done, against a common garden wall, or to go to the expense of a trellis? If the latter, what kind of trellis would be the least expensive?

"2. Are Peach trees in a Peach house benefited by the free admission of the frost in winter, or would it be equally good, or better, for them to have the frost just excluded? In the latter case, of course, hardy greenhouse plants, bedding plants, and any hardy plants in pots, to preserve the pots from being broken by the frost, could be kept there very conveniently. Would Strawberry plants in pots for forcing be better kept out of doors and covered, or put into such a house near the glass, where the frost is merely excluded by a fire to keep the thermometer from falling below 33°?

"3. Would the coldest end of a long Peach house suit a Moorpark Apricot tree trained against the end upright glass, where nothing is trained under the roof glass to shade it from above, and where the door in the same end is always open when it can be with safety?"—CLERICUS.

[1. So far as the well-doing of the Peach trees is concerned it matters not one iota whether you train them against a wall or tie them to a trellis. Out of doors a trellis is often anything but an advantage, especially if so far from the wall as to admit of a strong current of air between the wall and the trees, as thus much of the advantage of the wall, as respects extra heat, is lost. In-doors this is of less consequence. The chief drawback to nailing Peach trees to the wall of a Peach house is, that in the course of years the wall will get well riddled with nail holes, and these, if not stopped, will become a harbour for all kinds of pestering insects. To guard alike against this annoyance and to keep the wall neat and clean we would recommend one of two courses. Make a trellis of wire, using it about one-eighth of an inch in diameter, strained longitudinally along the house about two or three inches from the wall, and at the distance of two bricks from wire to wire. Small iron or strong wire staples, with a hole large enough for the wire to pass through, will keep the wire firm, and at the regular distance from the wall. The other plan would be the simplest, and, I believe, the cheapest, and is largely adopted by Mr. Fleming, of Trentham, and you can merely do a part of your wall, if you like, as the trees grow. Metal nails of a good size are procured, are heated over a fire in an old shovel, kettle, &c., and are then thrown into oil. When cooled and dried they are fit for use, and it will be long before they are rusted. These are then driven in several inches apart in longitudinal rows, and are *never* extracted, the shoots being tied to them as wanted, and just cut away and changed at the next pruning and tying. In all new, good walls this mode is a great improvement on the old plan of pulling nails out, and using fresh nails and shreds, the latter of which alone are the best possible receptacles for the eggs of insects. By this means the shoots are tied to the nails, and there is no continuous pulling of nails out and driving nails in.

2. This has reference to a vexed question. We have had fine crops of Peaches for years in houses that never had the frost really admitted, and in which the roofs were fixtures. Nevertheless, could we uncover a house six weeks or so in autumn, merely guarding against heavy rains, we would do so. With or without uncovering, if it were practicable, and implied no danger to things that must otherwise be in the house, we should like the trees to have several degrees of frost, say three or four, or even more, before we had them pruned and cleaned, as the frost would arrest everything like growth, and be serviceable in giving a *quiescent* to some insects that might escape the washing brush. Such a frost generally comes by the end of October or the beginning of November, and, if practicable, we would keep plants under protection until it did come, and the trees were pruned and the house cleaned. Without such a precaution, however, we have often been obliged to prune the trees and clean the house in order to admit such plants as you mention. A better hybernatory for them can scarcely be found, and if you do not raise the thermometer by fire heat above from 35° to 40° there will be no danger of starting the Peach trees prematurely.

STRAWBERRIES FOR FORCING.—There are no modes of covering out of doors that would suit Strawberries for forcing equally well to their standing dry and free from frost in such a house; and so long as the house is kept cool it matters not whether the plants are near the glass or not. It is after they begin to grow, and throw up their flower-trusses, and come into bloom, that nearness to the glass, or at least unobstructed sunshine and a fair portion of air, are indispensable. Many a well-grown Strawberry plant in a pot fails when forced, because the flower-buds had been destroyed by alternate frostings and floodings. The being-in-a-pot renders it more subject to vicissitudes from sudden changes. Covering with glass sashes, wooden shutters, or any material for throwing off wet, would be the next best place to the floor of such a Peach house. We are often obliged to try many schemes, because we have not got a house at rest at liberty for such a purpose.

3. We know of nothing to prevent the Apricot succeeding; but if the house is wide, in addition to the door, it might be advisable to have a few squares in the glass end of the house made to open.]

PEACHES AND VINES IN A CORRIDOR.

"I am about to erect a corridor of glass, about eight feet wide, seven feet high in front, twelve feet high at back, along part of the south front of my house, to make a communication between my drawing-room and the rest of the house, instead of passing through the dining-room. At present there is a border with Vines against the wall. I am told that Vines do not do well under glass without artificial heat. If this be the case is it necessary to keep a high temperature? I had thought of putting some Vines in front of the glass case in the usual way, and to have planted Peaches against the wall. I am told, also, that Peaches do not do well without heat. Will you advise me what is the best thing I can do in this case, and also inform me whether I might withdraw artificial heat in the spring and summer if I should wish to have a gentle heat in winter? If I can grow Vines and Peaches without heat, may I plant the Vines inside, with a border outside?"

"If I may carry out my plans may I ask, also, what Grapes are best to grow without heat?"—Tyro.

[Perhaps we shall meet your views best by throwing the gist of your inquiries into several divisions.]

1. Peaches and Vines, otherwise properly treated, will do better under glass than when exposed to the open atmosphere. They can be kept dry when desirable, the glass will keep out several degrees of frost, and even the air, being still in severe weather, will be less injurious to tender plants than when rapidly in motion. Air-giving, where there is no artificial heat, must be a matter of importance; and coolness in winter must be insisted on, otherwise the Peaches will bloom so soon in spring that there will be danger of the frost destroying it, even with the glass protection. This would so far deprive you of the pleasures from the corridor in winter, and might be a reason why Peaches should not be grown there. Without artificial heat you would not often like to give air in winter, even though the sun should raise the temperature from 50°, and considerably upwards at times, and that would not do much to start the Vines, but it would be apt to start the Peaches; and if they came into bloom by the last of February, or the first part of March, you would most likely lose them; while, if they were kept so cool as to open about the same time as those out of doors, the glass would be a great advantage, and when the fruit was properly set the sun could be used for ripening them, and also the Grapes, earlier and better than they could be ripened out of doors.

2. Whatever you grow in this corridor you would find the command of artificial heat a great advantage to the plants, and a great comfort to yourself and friends. You might want it a little in spring and autumn; you would not require it at all in summer. If you determined upon Peaches you must not raise the temperature artificially above 40° in winter, and even that will be rather chilly, coming out of a drawing-room about 60°. With Vines there will be no danger at 45°. Supposing that your Peaches came into bloom in March you would require no artificial heat for them, unless just to keep the place a few degrees above freezing. When your Vines come into bloom, if the weather was not warm and bright then, a little artificial heat would cause them to set more freely. Then a little more might be advisable to warm and dry the atmosphere in a dull, cold autumn.

3. If the Vines already against the wall are not such as you approve of, or can depend upon, we see no valid reason against your proposal of planting Peaches there and Vines in front, farther than if you resolve to keep the corridor comfortable in winter the Peaches will be in the warmest part, and most easily excited into action. Now, supposing that Peaches *must* form a necessary item, and economy, quick returns, and comfort must be combined, and the Vines now there are in good bearing order, or could be made so by fresh soil, drainage, &c., then I would let them remain, and grow them there, and bring in time a main shoot down the roof at about four feet or five feet apart, and I would plant Peach trees in front, to be trained to a trellis about eighteen inches from the glass, and about three feet six inches in height, if not higher. We should expect Peaches in front, and Grapes against the back wall, and also hanging from the roof, and the front lights being made to open freely, the

Peaches could have a free supply of air. This arrangement would not at all interfere with your ornamenting the corridor with blooming plants, such as Camellias, in winter, and keeping it at an average of 40° in cold weather. Were such a combination desirable we should be inclined to adopt such a plan if the Vines were to be planted afresh.

4. As, however, it is desirable to have the corridor comfortable in winter, as Peach trees are easily excited, and as, in addition, they are subject to the attacks of green fly, which necessitate the disagreeables of smoking, &c., and you were to ask me how we would do such a place, if it were mine, so as to combine pleasure and profit, then we would give up Peaches altogether; we would plant Vines inside in front, with the front wall on arches, and fruit them in front and along the roof, having the plants about four feet apart; and the back wall we would cover with Camellias or other winter-flowering plants, and a few other plants could be set on the floor or on a stage, and still leave enough for a pathway. No more artificial heat would be required in winter than would raise the temperature in severe weather from 35° to 40°, and none would be required after the frosts were gone, unless you chose to give your Vines a fillip when in bloom. You would thus have a comfortable shade in summer, fruit in autumn, and a pleasant display all the winter, with little annoyance from insects or sickly vegetation. For such a house no Vines will suit better than the White Royal Muscadine and the Black Hamburgs. You will now be best able to judge for yourself. We shall be glad to hear of your determination, and if we can be of any more use you may freely command our services.]

A MULTITUDE OF QUESTIONS RELATIVE TO GREENHOUSE BUILDING.

"Being a novice, and having had but nine of your valuable numbers called THE COTTAGE GARDENER, I have inclosed what I call a plan of the piece of ground I can appropriate for a greenhouse. By your kind advice I have no doubt I shall be able to get along with it.

"You must first understand that I am on a level piece of marsh land; the subsoil is gravel. Where would you have the doorway? The propagating place, which must be a quarter of the piece of land, which is about four feet seven inches by nine feet and a half long, will be at the west end, and divided by glass from the greenhouse. Would you have sashes fixed or moveable? and what sized glass would you recommend—the best quality? How high should the front and end wall be? and what height would you have the glass? and what would be the most economical way and the best to heat the propagating house or place and greenhouse? I was thinking of having a tank of the size of the propagating place, with the boiler under it, and of having the brickwork of the division pigeon-holed to heat the greenhouse. Would it not be sufficient for the fireplace to be outside at the west end? Of course you will advise me the size of the rafters for sashes or otherwise. My chief object is to propagate annuals, Fuchsias, Heaths, Verbenas, and Geraniums."—R. L. G.

[As the questions of economy, and elegance, and usefulness are to be combined, we would advise the following:—Height of house behind, nine feet six or nine inches, so as to be lower than the wall of the cowshed against which it abuts; height of front wall, six feet, or five feet nine inches, half to be brick, the other half glass. The front glass to be in sashes to move, or without sashes and fixed, as we recommend the roof to be, provided there are ventilators in the wall below, four of them at least eighteen inches in length and one foot in width. The sashbars or rafters we recommend to be one inch and three quarters wide and three inches deep, and placed so as to receive British sheet glass, such as Mr. Phillips advertises and sends out, of eighteen inches wide and twelve inches deep. Four or five ventilators, the size, or nearly so, of these squares, should be hung by their centre at the apex, so as to admit air at pleasure. By such means there is no rattling of sashes and breakage of glass from that source. The difficulty of arranging the inside consists chiefly in the fact that there *must* be a propagating part at the west end of four feet seven inches taken from the length of the house; and with its breadth, of nine

feet six inches, and separated from the greenhouse by a glass division. Whichever way this is heated it would be found awkward, and take up much of the available room to have the means of getting in and working inside. It will, therefore, be next to essential that there should be a pathway of two feet in width across the house at this propagating end, and then the glass division being made to open in parts, everything may thus easily be done in the propagating part. Presuming that the west end will be brick and glass, a part of the glass could there be made to open; but then you could not attend to plants from the outside with the same comfort in all weathers, though it could be managed from that end if there was no pathway across the house.

Keeping this pathway in mind, the neatest arrangement would be to have the door at the east end, or in the middle if elegance was desired; to have a shelf nine inches wide along the front, and a border nine inches wide at the back and east end walls; these walls to be covered with creepers, Camellias, &c.; and a two-foot path all round, with a platform four feet wide in the centre. There is always a degree of pleasure in being able to go round a house. If the storing a great many half-hardy plants were the object, then it would be best to have a two-foot path at the propagating end, a shelf of nine inches in front, a pathway two feet and a half, and a stage abutting against the north wall and the east end of the house, or rather, the west end of the dwelling house. Another mode might be having the pathway in the centre three feet wide, and having a platform three feet six at back, and three feet in front; but though either of these modes will permit of harvesting or keeping more plants, they will not be so elegant or pleasing as the pathway all round.

As to heating, it is generally best to let a correspondent follow out his own idea, as what is "best administered" will often be best, and therefore we would not throw cold water on your idea of having a tank the size of the propagating part, with a small boiler underneath it. We have little faith, however, in heating the greenhouse part by merely having the separating wall furnished with pigeon-holes. We should depend more on the following plan:—Have an open space below, and also above the tank, if the latter should be formed even of clinkers; have a free outlet from that chamber into the atmosphere of the propagating part to be regulated at pleasure, so as to give you the due amount of bottom and top heat. At the lowest point of the chamber have an opening a foot square in the greenhouse side, with a board to shut it when necessary; but that will not be very often. Have a triangular piece in the glass division contained at the apex between the sloping roof and the back wall, say eighteen inches deep at the back wall, made to open and shut at pleasure. In cold weather open this triangular piece, and the heated air will rush out, and the cold air will be drawn in at the opening into the chamber. In such a small house this will most likely answer, otherwise we should have advised taking and returning a pipe from the tank, or having a small, narrow tank in the greenhouse, from which the circulation might be stopped at pleasure. We were once consulted in a similar case, only the greenhouse was more than double the length, and the proprietor had a horror of all new-fangled notions, and would have nothing but back flues, as he knew all about them; but there *must* be only one fireplace. The flue entered at the north-west corner, just as the one under consideration, and was built stronger than usual across the end of the house, being brick on bed, and covered with flagstones two inches thick. It had a turn, and returned to the chimney, so that the hot end was heated separately. Before the turn the flue also joined the flue for the greenhouse, built brick on edge, and covered with tiles. An air-tight slide prevented the heat passing there when it was not wanted. When this was taken out, and the slide across the return at the end inserted, the heat went along the greenhouse, and terminated behind in a short chimney at the other end. The plan answered very well. There was no difficulty in regulating the different temperatures. We have understood that the rage for building has swept all away years ago.—R. FISH.]

THE ONE-COMB OBSERVATORY HIVE.

"No part of THE COTTAGE GARDENER do I read with

greater pleasure than communications relating to the practical management of bees, and I should feel much obliged if you would be so kind as to answer the following questions for me:—

"1. I am about to have made, by a country carpenter, a unicomb observatory hive, and I wish to know whether ventilators ought to be introduced. If the hive is ventilated I am told that the queen bee will find it too cold to lay her eggs; if it is not ventilated I am told that so heavy a mist will fall on the inside of the glass as to render the mysteries of the hive unobservable.

"2. Ought the hive to have a box, or enlarged space, at the base for the bees to cluster in during the winter?

"3. Shall I find any difficulty in making the bees enter a hive of this kind? Last summer one of my swarms refused for forty-eight hours to go into a shallow but broad wooden box hive, and were only at length induced to do so by smoking them with tobacco from beneath, yet at a sufficient distance as only to stupefy very few of the swarm. Now, a unicomb hive seems unnatural, so I am afraid I shall find it almost impossible to have a swarm in it if I am not instructed by you or one of your many skilful correspondents.

"4. Do bees dislike the full light of day, and ought the hive to have a wooden shutter to cover the glass? Messrs. Neighbour and Sons' catalogue states that they have found, from experiments made by them, that bees do not manifest the least dislike to a continual flood of light. Do you and your correspondents agree with them in this opinion?

"Any further information you can give me on the management of the unicomb observatory hive, or of the book or leaf hive, will be most useful, not only to me individually, but to many I know, readers of THE COTTAGE GARDENER, who are more anxious to observe the habits of this wonderful insect, and more particularly of the queen, than to carry off large quantities of the fruits of their industry. Before I conclude may I again trespass on your patience by asking you how the bar hive can be arranged so that the bees, when weak, can be fed from the top rather than from a drawer at the bottom?"—T. A. G. S.

[We much doubt whether "a country carpenter" will be found equal to the task of making such a unicomb observatory hive as will answer the ends in view, at all events unless he has before him a pattern to work by, for the details require a knowledge of the subject. To take your queries in order, we may say, as to *ventilation*, that in almost all hives this is liable to be misunderstood, and used to injurious purposes, as was constantly the case in Nutt's hives, in which it was chiefly or originally recommended. It is true that the small opening on the upper edge of the unicomb hive may be used either for feeding or ventilating; but the latter must be resorted to very cautiously and sparingly, for the escape of warmth in such a time is extremely rapid. There is not much to apprehend from the vapour adhering to the glass sides, as this is seldom sufficient to obscure observation. There would be no utility in "a box or enlarged space at the base;" for the bees would not quit the combs containing their food and young to cluster in an empty compartment at any time of the year. And herein consists much of the difficulty of keeping a family alive through the winter in a hive made almost entirely of glass, constantly conducting away the warmth. It is true that by means of a covering of felt, flannel, or hay, instances have occurred of preservation; but more commonly the inconvenient and unnatural arrangement of a unicomb hive restricts its utility for practical and scientific purposes to one season of working. As regards the "difficulty of making the bees enter a hive of this kind," it is considerable, as the swarm cannot be shaken into such an awkward receptacle; but a common hive must be used in the first instance, from which it can be transferred in the evening. Perhaps the apparatus contrived by Messrs. Neighbour is the best, which consists of a long wooden trough or funnel fitting into the entire length of the hive, the top board being unscrewed to admit it. There is then no difficulty in pouring the bees down, the trough being made wide at the top, and tapering downwards to an opening of about an inch in width. For security it may be well to have outside shutters, or a moveable inclosing wooden case; but there is no doubt that the bees will carry on their operations exposed to the full light of day, though certainly not from choice. One of Messrs. Neighbour's unicomb

hives thus working was exhibited last season at the Zoological Gardens, London; and there still remains, at the same place, a family in one of Mr. Taylor's bar glass observatory hives (see "Bee-keeper's Manual," page 68, fifth edition), in which it worked exposedly during the summer, though covered for protection through the winter.

In reply to your inquiries as to *feeding bees*, no doubt the food should always be placed *within*, or be accessible from within the hive at all seasons. A drawer at the bottom is not found so safe and eligible as a vessel placed upon the top of the hive, having a hole there through which the bees can ascend, whether for the purpose of feeding or of working in a super. The details of the construction of such a passage in a bar hive, with the suitable feeding troughs, would be at once understood by referring to the full instructions and illustrations to be found in the work on bees by Mr. Taylor to which we have already alluded.]

LACHENALIA TRICOLOR.—SEEDING VERBENAS.

"Will you be so kind as to give me the name of the inclosed *Lachenalia*, a most useful winter-flowering species of vigorous habits?"

"I should also be glad to learn the best way to treat *Verbenas* to obtain seeds from them. It appears to me that they grow too freely when planted out to produce much."—Y. Z., *Guernsey*.

[This is, as "Y. Z." says, a most useful winter bulb; but we thought it was lost for the last thirty years at least. It is the smooth, shining, plain green-leaved kind of *tricolor*. *Tricolor* is so called from the zebra bars across the leaf. The variety from "Y. Z." is called *lucida* in some of the early volumes of the "Botanical Magazine." Mr. Beaton would be much obliged by "Y. Z." sending a couple of roots to the Experimental Garden next June, when the leaves will be all gone; and he advises "Y. Z." to offer his surplus bulbs to some London nurseryman in exchange for some of the new bedding plants, this *Lachenalia* being a stranger to the present race of London gardeners.

No one crosses, or not one out of a score, any of the *Verbenas*. Some of the kinds seed as freely as Poppies, and some not at all. We have no personal knowledge of their ways, but we know they sport like Dahlias; and all flowers which do so sport are not to be depended on for crossing, that is, you cannot depend on mixing the colours or properties by the pollen. The right way to cross a *Verbena* is to have the mother plant in a pot, so as to be able to keep it out of the reach of other pollen than that which is intended, to thin the truss of flowers more than one-half while in the flower-bud, and just before the flower opens to slit it up from the middle of the tube with a pin, to extract the anthers, and to dust with other pollen when the stigma is ripe or appears moist. But an off-hand way of doing it is to pull off the flower carefully, so as to leave the style safe behind, as you would a Polyanthus or an Auricula; then to take another flower from the pollen plant and place it on the naked stigma, so as to look as if it grew there. The pollen being in the upper part of the tube, it may dust the stigma or it may not. The slitting of the tube is the real practical process.]

FUCHSIA FOR A SMALL BED.—WALTONIAN CASE MANAGEMENT.

"Will you please to inform me what is the best *Fuchsia* to make an entire small bed of? Also say whether I could raise sufficient plants from cuttings now in time to fill a bed with *Verbena venosa*, mixed with scarlet variegated Geraniums, and what would be the best Geranium for this purpose?"

"I am getting a Waltonian case made. Does it require the sand to be kept damp? and what heat should it be?"—J. J. B.

[*Fuchsia globosa major* is the best one for a small bed, to be cut down every autumn, and to be covered with coal ashes in winter. For a terrace garden or for a "gem of a garden" this is the only one of all the Fuchsias which is in the right style of growth and flower for a moderate bed, and

no such garden is, or ever will be, complete without a pair of them at least. The sides might be edged with Crocuses, and the middle between the Fuchsias might be filled with bulbous or Spanish Irises, or with dwarf or double Tulips, all of which might remain together for years. The next best *Fuchsia* for a neat garden is a large-flowered variety of *microphylla*, which never stands the winter. One or two-year-old plants of this *microphylla* make the best *clipped rows* to accompany long, straight lines in geometric gardens, and both it and *globosa major* can be kept to any architectural shape, so to speak, without hurting the flowers. For a very large bed *Riccartonii* is the best *Fuchsia*. The finest beds in the county of this kind of *Fuchsia* are at Hampton Court. It ought to be cut close to the ground every winter, and it is quite hardy. The third or fourth best is *gracilis*, but this is better as a hedge three or four feet high. This is the time for propagating *Verbena venosa*. The old scarlet variegated Geranium is the only one to plant with *venosa*.

The layer of sand in a Waltonian case should neither be wet nor dry, but drier before the middle of March; 70° is a good heat for it with air.]

HARDY SCARLET GERANIUMS AND BLUE FLOWERS FOR BEDDING.

"An old subscriber to your journal, residing in the north of Shropshire, wishes to know if there be any good bedding scarlet Geranium equally showy as *Tom Thumb*, but more hardy.

"She finds that *Salvia patens* and the branching and Chinese *Larkspurs* do not flourish in her garden, owing, probably, to the smoke of some chimneys near to it. She is, therefore, rather short of blue flowers, and would be much obliged by having the names of some given which are pretty and suitable for bedding."—C. I. S.

[*Punch*, alias *St. Vincent*, is a better bedding Geranium even than *Tom Thumb* where the soil suits it, and it is the easiest of all the scarlet race to keep in winter; but without a trial no one can tell how it would turn out. *Compactum* is the next easiest to keep, and will do equally well on all soils. *Trentham Gem* is a new bedder of the first-rate-style class, and keeps as well as *Punch*, and will probably, when it is well known, take the place of all those bedders which grow stronger than *Tom Thumb*. But there are much dwarfer kinds of scarlets than *Tom Thumb*, which keep fully as well, if not better. *Royal Dwarf* is, perhaps, the best of them; *Collins' Dwarf* and *Glowworm* are the next two, and the three have the *Tom Thumb* or *Frogmore Scarlet* style of flowers.

Blue bedders are as scarce as "true blues" everywhere; there is nothing between the little blue *Lobelias* and the tall *Salvias* and *Lupins* worth planting except the *Larkspurs*.]

VARIEGATED MINT AS AN EDGING FOR SCARLET GERANIUMS.—DELPHINIUM FORMOSUM AND CALCEOLARIA AMPLEXICAULIS FOR BEDDING.

"Do you consider the Variegated Mint superior to any plant we grow when used as an edging for a bed of Geraniums, &c.? I am entirely unacquainted with it, and shall be glad to know the height which it attains, and the distance small plants spread in a season.

"*Delphinium formosum* is also new to me. Will you, at the same time, describe its growth, how far apart it requires placing in a bed, and whether plants raised from seed in a cold greenhouse in February will be sufficiently early in flowering to make a good bed this year? I propose having one of my beds filled with the *Zelinda Dahlia*, and growing round it a band of *Calceolaria amplexicaulis*, edged with the Variegated Mint. I should be glad to know your opinion upon it, and whether the *Calceolaria* is too high for the purpose."—FLORA MONTAGUE.

[The Variegated Mint is the best edging plant we have for a Geranium bed, or to front a mass of evergreens; also to mix with variegated Geraniums for a bed. It is best from cuttings made in April, and the more it is stopped all through the summer the better it looks; therefore it may be kept as low as ten inches, and from that to twenty inches or two feet, in good soil. It is the easiest of all plants to

root; and to make an edging of it at once, six inches apart is the best distance to plant it, but ten inches will do. The same distance would do from the edge of the bed.

Delphinium formosum, from seeds in the spring, will not make a flower bed that summer, but if got up in March it will show bloom late in September. One-year-old plants of it for a bed should be planted in March or April fifteen to eighteen inches apart, and it rises eighteen to twenty inches the first year. Older plants should be a little wider apart, and in good ground will grow two feet high. *Calceolaria amplexicaulis* will do as you propose, and so will the Mint; but the Mint next the *Zelinda* and *Calceolaria rugosa* outside would look better. One row of the Mint outside a bed of *Zelinda* would much improve it anywhere. Oblige us with more of your propositions.]

LUXURIANT OLD JASMINE NOT BLOOMING.— PRUNING MYRTLES AND FUCHSIAS WHICH HAVE BEEN WINTERED DRY.

"I have a white *Jasmine* on a wall, rather a low one. It sends up strong branches, four to six feet or more, every year. I am obliged to cut it to keep it in reasonable bounds, and consequently get no bloom at all, or only at the top of the wall. It is very old, and has great stumps. Can I do anything to improve this state of things?

"A favourite *Myrtle*, about two feet high in a pot, has dropped its leaves, which look scorched. Should I cut it down and repot it?

"My *Fuchsias* I have kept in a room in-doors all the winter without any water, and not cut down. Some have kept sprouting, and some are dry. Have I done right, and what should I do now?"—H. S.

[The long suckers from the large stem of the old *Jasmine* should have been stopped several times, and if there was no room to train all of them some of the strongest ought to have been cut out when they were six inches long, and the side-shoots from the stops would flower in time.

No plant bears the knife better than the *Myrtle*. Cut all the young wood to little stumps next April, and wait till the plants are green again before they are fresh potted.

It is best to cut down now such *Fuchsias* as were kept dry, then let them be watered, and when the young shoots are a few inches long shake the soil from them, and repot them in fresh soil.]

CONCRETE WALKS.

"Mr. Beaton's receipt in THE COTTAGE GARDENER'S DICTIONARY seems to be an excellent one. If the Editor thinks that the best, would he explain what it is that is to be well rolled and watered to the thickness of three inches? Does it mean that the six inches of stones, brickbats, &c., with the layer of chalk, are to be rolled and watered until from six inches they are reduced to three inches?"—W. W.

[That is the intention, and with a heavy roller it is easily done. The railroad people in chalk districts do their yards in the same way, and also carry chalk long distances for the same purpose. There are many samples of the plan to be seen at most of the stations in Surrey and Kent.]

CULTURE OF THE DWARF WHITE ROCKET.

"I shall be obliged if some one of your readers will inform me how to cultivate and manage the old-fashioned dwarf white Rocket. The French Rocket lives year after year, but I always lose the old-fashioned white dwarf."—RUSTICUS.

[The old-fashioned double white Rocket, *Hesperis matronalis*, like the old single-flowered parent and all the rest of its varieties, should be taken up every year when the borders are dressed off, and divided and replanted in new or fresh places. If the wish be to have them again in the same places, whether in beds or bunches in the mixed borders, the whole of the soil should be changed for them. They will flourish in any good common garden soil, and all the better when a spadeful or two of leaf mould, or a little nice earth from an old hotbed, is well worked into the spots

where the plants are to be again planted. This planting we always do with the dibble, just as we do with a Cabbage plant, taking care to fasten it well in the earth. With this attention we have found all the varieties of the Rockets to do well, and yield an abundant increase at their roots for division again the following season, without the trouble of making cuttings. Slugs are particularly fond of, and very destructive to, these plants, and secrete themselves among the leaves and in the old flower-stalks, where they will eat off and soon destroy the whole crown before one is aware of them.

It has been said that the Rocket does not flourish in the neighbourhood of London and Paris. Miller, and Martyn, the editor of his "Dictionary," made the blunder to call it a biennial; but there is no question that it is a perennial, though rather a miffy one. We have had the single for years in the same spot; but, nevertheless, it is a much neater way and gives new life to the plants to take them up and divide them, and plant them in fresh places annually. If the wish be for good large bunches in the mixed borders, plant, after well preparing the soil, three or four well-rooted pieces in a triangular form, pretty closely together, thus *.* We know of no hardy border plant that is more worthy of this little attention than all the Rockets are. They may well be called "Dame's Violet;" but these sweet flowers have many other English names; as, for instance, Common Rocket, Damask Violets, Winter Gillyflowers, Queen's Gillyflowers, Rogue's Gillyflowers, and Close Sciences. The common yellow Rocket, or the Herb of St. Barbara (*Barbarea vulgaris*), should be dealt with just in the same manner as directed for the double Dame's Violet, and it then forms a very ornamental plant in the flower-border, flowering about the same time. The Rockets all delight in a new, good soil, and in rather cool situations. We have seen them wild on ditch banks, and could name many of their localities, although it is properly called a rare plant in a wild state by botanists.]

TO CORRESPONDENTS.

CINERARIAS (R. H.).—Your pips packed in wool—it should have been damp moss in a small box—were dry and shrivelled. The colour, however, shows that they are not deserving attention; there are hundreds of the same blue tint.

HOGG'S GARDEN TILES (Inquirer, Lancashire).—They are now made hollow, and of a different material. We are informed that they stand the weather well. No one but the most thoughtless would back a cart or drive a wheelbarrow over an edging. No edging would endure such usage.

MOWING MACHINE (An Inquirer).—We know of none better than those advertised in our columns.

SEEDLING SALVIA (F. T.—, Jersey).—You say the foliage and habit are those of *Salvia splendens*, and we can say decidedly that the pale scarlet colour of the flowers is very beautiful and original.

GARDEN PLAN (H. G.).—Your own way is just the right style of planting such beds. Can you not get some Variegated Mint to mix with *Flower of the Day* in the centre bed, and also an edging to it of pink *Virginian Stock*, to be sown now four inches from the grass? then, with an edging of white *Virginian Stock* round the *Tom Thumb* beds, and in all their sharp points, you will look as smart as possible, and just in the first style of fashion.

HYACINTHS, &c. (A Constant Subscriber).—We have seen Hyacinths much as yours; when growing freely they had received a check from frost, or had been allowed to get quite dry. You are quite right in blaming the nurseryman if he knowingly sent you inferior or unsound bulbs; but the best and most experienced will be deceived in bulbs at times, and tradesmen are often deceived as well as their customers. We would not prune your plant much. Keep it rather closely as respects air. Give it a shade with a muslin curtain in bright days. Sponge its leaves, water freely as it requires it, especially in a fortnight or so after finishing flowering. Give more air and exposure to light in autumn, and we trust you will have flowers about Christmas. It is a small kind.

SMALL GREENHOUSE (J. Masters).—We hardly understand your letter, but if we do not you had better be more precise. It is not a usual thing to have a house seven feet high in front, and five feet high behind. Is all the light admitted by the front windows? If you have a roof of glass, then dwarf plants on the front shelf will not shade the plants on the stage. Until we knew more we should advise you to confine yourself to Camellias, Geraniums, and Fuchsias. The first will bloom in winter and spring, the second in summer, and the third in summer and autumn.

WORK ON GARDENING (Short of Education).—There is no work better adapted to your wants than THE COTTAGE GARDENER'S DICTIONARY. The emphasis is put there over the proper syllables of the names, and the names are translated.

SKELETON LEAVES.—*Jerminius* would be much obliged by information how those exhibited in Regent Street were prepared.

WORK ON CULTIVATED GRASSES (Novice).—The *Agrostographia* is an excellent work. You can obtain it from Messrs. Peter Lawson and Son, Edinburgh. You may have any numbers of THE COTTAGE GARDENER you require. It is impossible to foretell when any particular number will be out of print.

BLACK FLY ON CHERRY TREES (A Subscriber).—This is the *Aphis cerasi*. It is best destroyed by tobacco water. The most economical way of applying it is by dipping the leaves on which they are into a basin containing the tobacco water.

VARNISH FOR RUSTIC SEATS.—A Subscriber sends an answer to a query by another respecting a varnish for oak seats. One quart of boiled linseed oil and two ounces of asphaltum, to be boiled on a slow fire till the asphalt is dissolved; to be stirred while doing, to prevent it boiling over. Better to do it out of doors. This gives a fine dark oak colour, is not sticky, and looks well for a year or two.

DIRECTIONS FOR FORMING A GARDEN (W. R.).—Buy the five "Manuals" advertised in our columns, viz.:—"Gardening for the Many," "Kitchen Gardening for the Many," "Fruit Gardening for the Many," "Flower Gardening for the Many," and "Florists' Flowers for the Many." They are only fourpence each, and will give you all the information you seek for.

PROPAGATING CASE (Kate).—We fear so trivial a structure will be expensive and of little service.

PEAT BRICKS FOR BURNING (W. H.).—These differ totally from the peat or heath soil used for potting, and will not answer for that purpose.

CINERARIA MARITIMA CUTTINGS.—The Rev. F. W. Adey, Markgate Street, Dunstable, wishes to exchange Verbena and Calceolaria cuttings for the above.

BURYING BEES IN WINTER (A Young Apiarian).—The result of the experiments as to burying bees in the winter is given in the sixth volume of THE COTTAGE GARDENER, chiefly at pages 11, 40, 57, 58, and 154, and offers no inducement to repetition.

NAMES OF PLANTS (W. B. B.).—Yours is the *Echeveria retusa*. It should be treated as a dry greenhouse or conservatory plant, and should be sparingly watered, particularly during the winter months. It flourishes in equal parts of sandy loam and peat, mixed with plenty of old mortar pounded up, with good drainage. All the *Echeverias* do well upon the dry shelf in the greenhouse or conservatory. (B.).—Yours is *Cineraria renifolia*, a native of Russia. Not common. (A Beginner).—We cannot make out your drawings, but the leaf is that of a weed, *Geranium dissectum*. We will publish a list of annuals next week. (M. N.).—*Arabis alpina*.

SEEDLING TROPEOLUMS.—These, which came without any note, cannot be judged from such withered specimens.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

NOTTINGHAM CENTRAL. (Poultry, Pigeons, and Canaries.) January 19th, 20th, 21st, and 22nd, 1858. Sec., Mr. Etherington, jun., Swinton, near Nottingham.

N.B.—Secretaries will oblige us by sending early copies of their lists.

FEEDING POULTRY.

No complaint is more common among those who keep poultry than of the great expense of food. Believing that by painstaking this may be greatly diminished, we are induced to recur to the subject, although we have frequently treated upon it before. In a recent poultry visit we found, on inspecting the yard, that the barley was fairly part of the footing on which we stood. It was trodden into the earth, and while we stood lamenting the waste a well-disposed dairy and poultry maid arrived with another allowance in a tub. When we forbade that it should be given she exclaimed against the cruelty, and asked how the birds could lay if they were not fed. We accordingly showed her, and she went away, not convinced, but shaking her head, and muttering something about "bother."

Now, our plan is as follows:—Mix some meal, either barley or oatmeal (the latter is best), and feed with small pellets, throwing two or three down at a time. When the fowls cease to run after them leave off feeding. This should be done morning and evening. In the middle of the day give a very little whole corn, and scatter it well about. When fowls always have food by them they are badly fed; and if they will not run after it they do not want it. Fifty may be fed in this way in a quarter of an hour. More fowls are injured by over-feeding than by short commons. Another advantage in this system of feeding is, that nothing but the fowls are fed—no sparrows or other interlopers.

In all houses there are scraps, pieces of bread or even crumbs from the table at every meal, cooked potatoes, bread used for toast and water, and all these things are valuable helps in feeding and reducing the meal bill. These must

not be considered extras, but should take the place of a meal, say the midday feed of whole corn. Some may fancy their pets will be starved on such a dietary scale, but they are mistaken. Look at Pheasants and Partridges. They have to seek every grain; yet their plumage is always perfect, their condition excellent, and those who eat them can say how plump they are, and how juicy and full of flavour. If poultry is to be kept as a pleasure let it be moderately fed; and if some Cochins should, like Oliver Twist, "pluck up a spirit and ask for more," let him either seek it or wait till the next meal.

Comparisons are possible in most things. How long would children remain in health if they were allowed to have food constantly within reach? And suppose, as Sydney Smith used to write, suppose, when tired of bread and butter, bread and jam were given, then pound cake, and then every description of pastry, the poor child would lose its appetite, and then fall ill. "Oh," says some one, "how ridiculous! Who would do this? Any one would be a fool to act in such a manner." Softly, friend; you do it with your poultry. Too often your fowls have food always by them scattered on the ground, or, worse still, in a trough. The very sight sickens them.

"Ma'am," says the poultry maid, "the fowls won't eat."

"Poor things, they are tired of their barley." This is the bread and butter. "Give them a little hemp seed." This is the bread and jam.

"I can't make the fowls out, ma'am; they have no appetite."

"Chop a little suet and give to them." This is the pound cake.

"Their appetite don't improve, ma'am."

"Give them some raw meat." This is the pastry.

"The fowls don't lay."

They cannot, they are too fat, too feverish, too ill; they are dying for want in the midst of plenty. In their haunts you will find corn, hemp seed, suet, and meat, all lying about in lumps; and the maid was right—they have no appetite. That, like the church vassals in the battle, has "been gone ever so long."

Let your fowls be hungry enough to run after you. When the cock finds a piece of food and calls, the hens should run to him, not like some of the plethoric pets, merely raise the head without leaving their lazy posture and snug corner.

In nineteen instances out of twenty fowls cost at least double what they should.

CHARACTERISTICS OF A PARTRIDGE-FEATHERED COCHIN-CHINA COCK.

I MUST say I am much surprised by the writer of the letter in your paper of the 10th inst., in reply to mine of the 17th of February, commencing his by saying that "I must have misunderstood that class C at the Liverpool Exhibition was a class for single Cochins of all colours, and supposed it to be only for Partridge Cochins strictly so called," whilst I distinctly said it was for the best cock of any variety or age, and mentioned, also, that "the Cup and high commendation" were awarded to Buff birds, in which decision I agreed. In referring to any variety or colour I did not, however, most certainly understand that a large, well-formed bird of any mixture of colours would be considered preferable to a comparatively smaller bird with all the true colours of the particular variety to which he professed to belong. I had, in common with all the parties to whom I have mentioned the subject, always considered this class purposely intended to collect together true specimens of all the varieties, and that the duty of the Judges was to award the prizes to the best birds of each or any distinct variety, and so inform parties like myself of the correct qualifications required for such first-class birds. If by "any colour" is meant that colour is no object, but size and shape everything, then I must at once admit that pen 323 should not only have been highly commended, but should have been awarded the Cup, for without doubt he was the heaviest and best-shaped bird in the whole class. I cannot, however, suppose that this reading of the class is correct, having noticed that at all the previous Exhibitions the prizes were,

in every instance, given to birds most representing perfect specimens in each particular variety.

I had no intention of being angry in my appeal to the Judges as to what, in future, were to be the characteristics of a Partridge Cochins. In again reading my letter to-day I must, however, admit that such feeling might be conveyed by it. My intention was simply to obtain from them, for my own and others' guidance, the true qualifications of such breed; and having been accustomed for so long a period to read in your pages the indispensable necessity of all such qualities as represented by the cock in pen 325, I must say I felt astonished to see a decision so completely contrary, and a bird possessing only weight and shape, without those qualities, carrying off the honours. I must apologise for having mentioned the name of the owner of pen 323 without his permission; it was, however, done thoughtlessly, and intended to convey to the casual reader the opinion of one so well qualified to judge of the merits of the successful bird, showing so strong a disposition to dispose of him almost on any terms. I never doubted his right to affix the price of £20 to his bird in the catalogue; I only mentioned the fact, and then said he had been sold by auction for about 20s. The price of £100 placed upon pen 325 was, of course, understood by every one to be a prohibitory one.

I was much pleased to read the particulars of the antecedents of pen 323. It does reconcile one to find that his good shape and size were not merely accidental, but the result of good and careful breeding, and I sincerely hope with your correspondent that during the coming season his produce may meet in competition with the produce of pen 325, and so again contend in friendly rivalry.

Having replied to "THE LATE OWNER OF THE COCK AT LIVERPOOL," as I felt bound to do, I would now ask you, who have always shown so strong a partiality to this very beautiful breed, to use your influence with our late Judges, and obtain from them their opinion with reference to the qualifications of the cocks of this variety, my only desire being to obtain correct information as to their particular markings, &c., and to know if the previous views generally entertained and almost universally acted upon at Exhibitions have been erroneous.—CONSISTENCY.

ON REARING ENGLISH SONG-BIRDS.

THE BLACKBIRD.

THE strongest birds are from the earlier broods, and these are often hatched by the end of March. The cocks are always darker than the hens, and are, therefore, easily distinguished. They should be taken from the nest when the quills of the wing and tail feathers are just appearing. Put the nestlings into a small covered basket, and keep them warm. I find a small basket, with a cross handle and a cover at either end, the most convenient; they will then readily open their beaks for food when the covers are raised. Half fill the basket with bran for the nestlings to rest on; this I find cleaner than hay, but it must be changed frequently. To feed them:—Take a piece of crumb of stale bread, steep it for a few minutes in cold water, then squeeze it as dry as possible; have ready some hot milk, and pour as much upon the bread as it will just absorb. Great care must be taken that the milk is perfectly sweet, as, if this is not the case, disease and death are the inevitable fate of the nestlings. Allow the bread and milk to become cold before feeding the birds; prepare a quill by cutting it like a spoon; take up a small quantity of the bread upon this, and feed the nestling with it when it opens its beak to receive it. Each bird requires five beaksful for a meal, and the meals must be repeated at intervals of two hours from sunrise to sunset. In addition to the bread and milk, young Blackbirds require a little uncooked lean beef cut into fine shreds, and if at all dry dipped in water. As soon as the young birds begin to peck, which will be when they are about a month old, they should be put into roomy cages, well sanded, and supplied with a jar of bread and milk, mixed with a little lean meat finely shred. They require plenty of fresh water both for drinking and bathing, and the cages must be kept thoroughly clean. With this care, and an occasional change of diet, Blackbirds may be preserved in health and song for

ten or eleven years. Bechstein's universal paste No. 1 suits this bird admirably, and for those who may wish to try it I copy the receipt.

"Take a stale, well-baked white loaf, put it into cold water until quite soaked through; then squeeze out the water, and pour over it boiled milk, adding two-thirds of flour. Mix into a stiff paste."

This must be made fresh every morning, as it soon becomes sour, and consequently hurtful. Of course the quantity of bread must be in proportion to the number of birds to be fed. Great care must be taken that the jar into which the food is put is kept perfectly sweet and clean. Want of attention to this point may be followed by the death of the bird in a few hours.

In rearing birds, as in other more important employments, success in a great measure depends on punctuality, care, and patience; and if the charge of these little nurslings teaches us these invaluable lessons great will be our gain, and we shall never have cause to regret the maxim, "That which is worth doing at all is worth doing well."—M. M.

[We shall be much obliged by a continuance of these practical notes.—ED. C. G.]

AN INJURED RACE.

ALLOW me to occupy a few lines in your paper, as lately no mention has been made of us. I am one of the Black Polish race. Why are we despised? We combine many qualities that the Cochins, Dorkings, and Hamburgs cannot boast of. For instance, our eggs are as fine as most Dorkings', and we do not eat nearly so much as either the Dorkings or Cochins.

Though the Hamburgs may lay more eggs they cannot compete with us in regard to size, and when they are "plucked" they look "very small," whilst we, I have been told, fill a very good place at table. We are contented with our liberty for an hour a day; we care not for rambling like other fowls. Our rich black plumage and white topknots are very handsome, and though for the first three months we are delicate, we well repay the care bestowed upon us, as after our infancy we are as healthy as other breeds. I heard the person to whom I belong say she prefers us to Spanish, Dorkings, or Hamburgs, all of which sorts she has kept in the last two years. We combine every quality but sitting, and in that respect we are not worse than our neighbours, the Spanish and Hamburgs, and, without being conceited, I must add, we are the favourite fowls of our mistress.—THE CACKLE OF A POLISH HEN.

POINTS IN BELGIAN CANARIES.

SOME of your friends, the Canary fanciers, have inquired through your paper what the points of a good Belgian bird should be for exhibition. I beg to say that I certainly do claim the honour of first introducing them into England. For many years I have been a fancier, and, having heard of these birds, I took a journey into Belgium, and brought some excellent specimens home, and have ever since bred them, occasionally going into that country to get fresh blood, as there is a disposition in the birds to degenerate into coarse-feathered, thick specimens, contrary to what a real Belgian ought to be.

I now give the points, which are ten:—1st. Head *small* and *flat*. 2nd. *High* shoulders. 3rd. *Narrow* across the shoulders, standing out at the back. 4th. Round in the back, and bow-shaped. 5th. Long in the *leg*. 6th. Show the *thigh* well. 7th. Strip themselves well up. 8th. To have a narrow, *thin tail*, to be shut up as one *feather*. 9th. To have a small *frill* just at the chest. 10th. Not to be under six inches, as length is a point; but, above all, attention must be paid to shape, as, void of this, no bird can ever be expected to obtain a prize. I have a pair of the Nottingham Show birds which possess these properties.

There is a breed of birds, very long and coarse-feathered, which are not the real Belgians, against which be guarded, as they spoil all the true breeds, which are so beautiful.

I shall be very pleased to communicate with any of your Belgian fanciers, having had such experience in breeding this beautiful variety of Canary.—THOS. MOORE, *West Street, Fareham*.

OUR LETTER BOX

FOWLS FOR CONFINED SPACE (A Novice).—Cochin-Chinas are the best, and we would select either the Buff or the Partridge-coloured. They are also the best winter layers. We think the Pencilled Ham-burghs (Gold and Silver) are much alike in their habits. Pullets hatched in February will lay during the winter.

RABBITS WITH BLACK EXTREMITIES.—A Novice says that he knows some imported from Bavaria, and which the owner calls Bavarian Rabbits.

FOWLS TRESPASSING (K.).—Give your neighbour notice that you will sue him for damages in the County Court. The amount of damages is immaterial—it is to prevent the trespass. To whom does the piling belong over or through which they come? Cannot you arrange with your neighbour to apply some wire fencing, so that you may both enjoy your several amusements? Gentle means and good neighbourhood are best.

SEPARATE CLASSES FOR BEARDED AND UNBEARDED POLANDS.—“I observe there is to be a Summer Exhibition of Poultry at the Crystal Palace in August next. I therefore would beg to suggest, before the prize-list is arranged, that there should be a distinct class, as in the Cochins, for ‘bearded’ and ‘unbearded’ Golden and Silver Poland. Since it has been found that the former always—irrespective of merit, as I well know—carried off all the prizes when the two varieties have been brought into competition, owners of the latter have discontinued sending their birds to the shows. Of the wisdom, or otherwise, of the Judges always giving the ‘bearded’ birds the preference I do not wish to speak, as, if it answers the purpose of the ‘getter up’ of the Show so to instruct the Judges, and it is clearly understood by the exhibitors, of course no one can reasonably grumble, although they may lament the loss of the scientific character of the exhibition, and how much at variance it is with the original shows established for the ‘improvement of the various breeds of poultry.’ I can quite understand persons who are not acquainted with the ‘points’ in the ‘Golden’ and ‘Silver’ Poland, passing by, almost without a notice, a pen of beautifully ‘laced birds,’ whilst they would be attracted by those who were ornamented (?) with a beard. There are persons to be found who will maintain that the ‘true bred’ Poland should have a beard, although they are unable to answer the fact that persons in breeding with a pair of ‘bearded birds’ not unfrequently obtain a beardless chick, which points out as plainly as possible that Nature is here making one of those efforts, which it is well known she always will make, to recur to the original state, which in the case before us would be brought about by the production of the beardless variety. I have bred with great attention for the last seven years Silver Poland without beards, and I have never had produced out of the numerous broods I have reared a chicken with a beard; and, in fact, I believe there is no person who will pretend to say that he ever heard of a case.”—C. S.

[The classes at Poultry Shows are already so numerous that Committees are not justified in increasing them, nor do we think they would be justified in doing so in this instance. There has never been any disqualification for non-bearded Poland, and we have seen them prize-takers at large shows, where the classes have been numerous and good. The truth is, that the admirers and breeders of these birds made a very bad fight when the bearded first invaded their territory. They retired without resisting enough to make a dignified retreat. The unbearded were never disqualified, nor is there anything in the rules of any society to shut them out. Four years ago there were distinct classes for bearded and unbearded, but the latter died of inanition. We think it is sound judgment in a Committee to discontinue classes that are not self supporting; we mean those that will not afford sufficient entries to help the prize-sheet and expenses. We believe we may say, speaking with authority, that no instructions are ever given to Judges. Just as it was proposed the emigrant should be landed on the desired shore, with a spade, a blanket, and a hard biscuit, to do his best, so Judges are turned into a show, with their books and prize-sheets, to exercise all the knowledge they possess. If “C. S.” will show a better pen of unbearded chickens than those that rejoice in the appendage we have no doubt it will get the prize. It has never been ruled that Poland must be bearded; but it is well we should warn him that “laced” birds will not do it. The prize is for “spangled” birds. The fact of plain or beardless chickens coming at times is easy to believe, because twenty years ago all the Poland were unbearded, and if one was found thus ornamented it was drafted as a “faulty” bird. At that time, then, they were making an effort in favour of beards, which they now make to get rid of them. The truth is that some breeders try experiments, and when their birds, apparently pure, are scattered abroad, the ignorance of their pedigree causes anomalies.]

CROSS-BREED OF BANTAMS.—“Having in my possession one *White Game Bantam hen*, and wishing to try an experiment, provided it be at all practicable, will you kindly inform me if such a bird matched with a Black-breasted Red Game Bantam cock would be likely to produce good Duckwings? Also, if it is advisable to have late broods, in order to keep them small; and which is the best month for Bantams to hatch?”—AN ADMIRER OF BANTAMS.

[Your cross will produce a Pile, but nothing akin to a Duckwing. It will probably be a handsome bird. It is always advisable to hatch late Bantams if you want them small. The best month for sitting them is August, because then there is fine weather enough to take them out of their early troubles, and the cold nights come soon enough to check their growth. They are very troublesome to rear if they are hatched later in the year.]

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WEEKLY CALENDAR.

D M	D W	MARCH 31—APRIL 6, 1857.	WEATHER NEAR LONDON IN 1856.				Sun Rises.	Sun Sets.	Moon R. & S.	Moon's Age.	Clock bf. Sun.	Day of Year.
			Barometer.	Thermo.	Wind.	Rain in Inches.						
31	TU	Wood Sorrel (<i>Oxalis</i>).	30.152—30.018	60—20	S.	—	39 a. 5	29 a. 6	1 32	5	4 13	90
1	W	Water Fennel (<i>Callitriche</i>).	29.910—29.830	68—33	S.	—	v	v1	2m35	3	3 55	91
2	TH	Early Orchis (<i>Orchis</i>).	29.793—29.692	66—42	S.	01	35	32	3 22	8	3 37	92
3	F	Spring Speedwell (<i>Veronica</i>)	29.823—29.666	54—44	S.W.	19	33	34	3 53	9	3 19	93
4	S	Willows, various (<i>Salix</i>).	29.773—29.654	59—30	S.W.	—	30	36	4 13	10	3 1	94
5	SUN	PALM SUNDAY.	29.598—29.318	57—40	S.	—	28	38	4 29	11	2 43	95
6	M	Spider Orchis (<i>Ophrys</i>).	29.330—29.248	57—27	S.E.	—	26	39	4 41	12	2 25	96

METEOROLOGY OF THE WEEK.—At Chiswick, from observations during the last twenty-eight years, the average highest and lowest temperatures of these days are 55.3°, and 32.4°, respectively. The greatest heat, 78°, occurred on the 3rd, in 1842; and the lowest cold, 16°, on the 1st, in 1848. During the period 110 days were fine, and on 86 rain fell.

ORNAMENTAL GRASSES.

STIPA PENNATA.

(FEATHER GRASS.)



THIS Grass, so commonly to be found in the windows of our seedsmen's shops, is one of the most graceful of its tribe. It is among the Grasses what the Bird of Paradise is among birds.

It is a perennial with fibrous roots; leaves in thick tufts, upright, long, narrow, sharp, rather rough, and dark green; sheaths of leaves striated, very long, especially the uppermost one, which is also considerably swollen, inclosing the young head of flowers, rising

above it when blooming, the leaf being bent back, pendulous, striated, and with edges turned inwards; stipules oblong, blunt; panicle, or head, of flowers on a stem about a foot high, erect, composed of six or seven flowers; calyx of two nearly equal, spear-head shaped, concave, pointed valves, containing one floret; corolla of two valves nearly equal, in length, the outer valve spear-head shaped, edges turned in, slightly keeled, with a terminal, twisting, feathery awn, sometimes a foot long, jointed, and finally separable at the base; inner valve much narrower, awnless, turned in at the edges, smooth. Seed cylindrical, pointed, loose, closely inclosed in the hardened outer valve of the corolla, which is very sharp, and barbed with bristles at the base, so that, after being borne through the air sustained by the long awn, when it alights upon the soil it there soon penetrates, and is retained by the barbs.

The beautiful and feathery appearance of the awns arises from their being thickly set with very fine, soft, whitish, semi-transparent, diverging hairs.

It is found on dry, mountain, rocky soils, and in such a situation was discovered, about the year 1724, by Dr. Richardson, in company with Thomas Lawson, both good botanists, on the limestone rocks hanging over a little valley, called Long Sleedale, about six miles north of Kendal, in Westmoreland. (Ray's *Synopsis*, 3rd ed., p. 393.) No one has detected it there since, nor in any other part of the British Islands, and we fear that it no longer belongs to our native Flora. It blooms in August, and ripens its seed about the middle of September. It belongs to the *Triandria Digynia* class and order of the Linnæan system.

Mr. Sinclair says that he never could obtain plants from the seed of this Grass when sown in the ordinary way on soils in open situations, and it may be owing to some peculiarity of this kind that it is now not to be found wild in this country. In pots and favourable positions the seeds vegetated very well. In many parts of Germany it grows naturally on alpine or dry, sandy places much exposed to the sun.

Gerarde, more than two centuries since, says, "This elegant plant Clusius first observed to grow naturally in the mountains nigh to the baths of Baden in Germany. It is nourished for its beauty in sundry of our English gardens, and is worn by ladies and gentlewomen instead of a feather, the which it exquisitely resembles."

It is readily propagated by division in the spring,

and flourishes in an open situation and light soil, especially if the soil contains chalk, or has lime rubbish mixed with it.

SPRING PROPAGATION.

(Continued from page 423.)

BEDDING GERANIUMS.—Now is the time to prove the grand secret of propagating all kinds of Geraniums, Pelargoniums, and Storkbills from *single leaves*. I said last autumn, and I hold it to be as true as THE COTTAGE GARDENER itself, that every leaf of all these kinds may be made into a plant before planting-out time next May, provided always that the bud at the bottom of the stalk is equally true, and that you take it and know *how* to strike it; and if you do not know how to strike it just listen to me, for I can positively graft a scarlet Geranium on a Walnut tree, and surely I can tell how to strike leaves with or without buds, but without buds they do no good after rooting. I rooted some last year without buds; but some which were put in last summer on the *outside* of pots, which were plunged in a border on purpose for such experiments, were considerably thicker at the bottom of the leaf-stalk in October than they were when they were first put in; and probably, at a certain age or size, these leaf-stalks might be able to form a bud, or shoot, or sucker, from the thick end, but the practice is of no gardening value.

I once kept for seven years an Orange leaf which I rooted, and it made no bud; but I have read of some which budded in less time, and of some which took fourteen years to bud, and after that made good plants. These facts are interesting, but are of no real use. To grow leaves into plants, however, is of the highest value in some cases. Suppose a gardener had a new seedling worth ever so much per plant, and that he could get five cuttings from it just now to begin with—would not five and twenty plants be of more value than five from the five cuttings, which could be divided and then multiplied by five times five? But the question is how to do it.

The smallest-sized pots are the best for all scarce Geranium cuttings. One cutting to be put in a thumb pot, and thirteen pots to the dozen, ought to be a safe rule in gardening practice, but not in nursery practice. One or two per cent. is all the verge on "profit and loss" which most nurserymen allow to their Geranium propagators; but then they do nothing else besides.

I prefer 60-sized pots, and four leaves in a pot, because thumb pots are such fiddling work to water, and then they are apt to be dry before you can turn your back. The frame, or pit, or propagating house for this work must not be quite so damp as for ordinary propagation, not, at least, till after the middle of May. The easiest way is to cut up a stem into so many joints, the cut to be *just above the joint*; then you have the length of stem between the joints for a cutting. Each length has one leaf and one bud at the upper end, and each ought to be thrust into dry silver-white sand in a flower-pot saucer as soon as it is cut. The dry sand will suck up the moisture from the cut ends in a short time, and thus render them less liable to damp. The cutting pot to be filled as for other cuttings, but with a thicker covering of sand on the top—so thick that the bottom of the cutting is just between the sand and the sandy compost below. The leaf side of the cutting is to be the farthest from the side of the pot, and if the leaf is top-heavy, or is a very thin leaf and not able to bear up, it must be tied to a little stick; and lastly, the centre of the pot must be left with a hollow to take the watering without wetting the cutting.

If, on the other hand, leaves are to be taken without cutting the shoots into lengths, you will have to take a good slice behind and *below* the bud, as you would for

budding, and the flat side of the slice is to be next the side of the cutting pot, and quite close to it. The top of the bud, or part where the bud is out of sight, to be just below the surface, and no more. All the rest of the proceedings are the same as for joint pieces. From 60° to 70° is the best heat for these kinds of cuttings; for if the heat is much higher the buds will start before roots are made to sustain the growth, and that might kill them.

I have struck a potful of a dozen leaves sliced off, and all resting against one flat, tally-like stick in the centre of the pot, and I have docked leaves by cutting one-half of them off all round, in order to get them to stand up "pricked-ear" fashion; for if they are allowed to flag or droop they do little or no good. The young plants they make are more like seedlings than established plants; therefore the plan is most useful for new or rare kinds.

The roots of Geraniums make cuttings as well as the tops, and they grow into plants much sooner than leaf cuttings. At this season, or when we examine the stock of old plants, I mean bedding plants, we find some are gone at the collar, while the roots and top are as fresh as larks. There is not one moment to be lost when you find the black disease has encircled the collar of a favourite kind. If the black is not all round the stem you may, perhaps, get rid of it with a careful slicing away of the black part, like a surgeon dressing a bad, jagged wound; but in most cases the safest way is to cut down the plant, and make cuttings of the tops and roots.

Thus last week I found one of my best seedlings from *Punch* had gone black at the collar, and there was more than an inch black all round the bottom of the stem. I cut this plant below the black part, and just over the top of where the first roots sprung from; I then pulled up the stump gently, so that part of the top roots are now above the surface of the mould, and I shall chance it to make shoots as a Dahlia root does.

A safer plan would be to shake out the roots from the mould, and make independent cuttings of the largest of them, cutting them into four-inch lengths, and planting them close together round the sides of a pot with little more than a quarter of an inch above the surface. The top of this plant, which was a single-seedling stem, I cut into three good, substantial cuttings; but, being stout and not very ripe, I left them twenty-four hours before I put them in. One ought to examine the roots of all dead or dying Geraniums, and if it is a valuable kind we should try to save it by root cuttings.

Again, we often find at this season that healthy-looking plants do not seem to "get on" in the winter pots, the soil not agreeing with them, or it had got too dry or too wet to be fit to give the requisite impulse to the roots; and, again, we put very scarce or very valuable plants into pots too small for them, and in soil too poor in the autumn, in order to have them kept more safe through the winter, that being the best means we know of for plants which are then taken up from beds or borders. The whole of the large collection of Geraniums which were sent into the Experimental late last autumn were thus treated with very poor, sandy soil and very small pots, and the other week we shook out every one of them, and put them into fresh, good soil and larger pots, and we had only one death—a variegated kind—out of above 900 plants.

Now, the practice of the best flower gardeners squares with all this, and, moreover, they, or at least the great and greedy among them, take advantage of these spring examinations, and cut off, or "borrow," as they say, as many roots as they think the plants can well spare, and make cuttings of them, and put one hundred of such cuttings in 32-sized pots, and place them in strong, dry heat in some of their hothouses, and the plants from

these they use in August to follow after annuals which were sown at the beginning of April.

Hundreds of plants come from *cuttings of the roots* at this season with a little extra heat. You might cut the roots of many of the Roses like meat for mince pies, and sow the bits like Peas in pots, and cover them like Cabbage seeds, and up they would come like pots of seedlings; and if they were of the perpetual classes they would flower, or many of them, the same autumn. It is only for want of trying that so few believe that most roots are just as excitable in the spring as the roots of Couch Grass and Bindweed are all the year round.

Before I go further allow me to remind you of a good old story which comes in just now better than all the stories about the elections, and that is, how to stop the *damp among seedlings* and *soft-wooded cuttings*. A little more air and five degrees more heat is a good rule; but the grand secret is to have a little very dry sand and peat, as small as dust and as dry as Scotch snuff mixed together, and to take a pinch of this between the finger and thumb, and to sprinkle it over where the damp is playing havoc. The dryness of the mixture sucks the wetness of the plant to such a degree as no ordinary damp can stand against; or, if it does continue, take a stick and make holes in the mould down to the crocks, and fill these holes with the peat and sand-snuff, and the peat will resist the water for weeks. You never saw such a simple practice turn out so effectually as this does in propagating. But one might fill a book with the mysteries of the propagating department by merely skimming the surface of a long memory.

If you were to take the mysteries in detail "there is no end to them;" but all ordinary people ought to know that many cuttings which are too hard for them to strike would now make excellent scions to graft on pieces of the roots taken from the same plants; but did you ever hear of burying the scion alive after grafting it on a root or stock? It is an every season's practice in the nurseries with grafts of Oaks, Walnuts, Robinias, and dozens besides. They graft and tie, tie and graft, whole long rows up and down through a large "quarter," and then "earth up" the rows as they "mould up" Potatoes, burying the balls of clay and all but the beak of the scion. But to imitate this fashion in-doors or in frames and hotbeds is the question. This I shall not explain till I come to that part in the grafting of Geraniums, which I will tell about next week.

D. BEATON.

WINDOW GARDENING FOR SPRING.

(Continued from page 410.)

V. WATERING.—There is no subject more bewildering to beginners than this. Let a gardener go into any house where there are plants in the window, and "How often ought I to water such and such plants?" is a question that is sure to be put, partly in the hope of gaining information, and partly for the purpose of conferring honour upon the informant, as, rightly or wrongly, the general public has got it into its head that the best way to please a gardener is just to give him the chance of telling everything he knows about gardening. I know I cannot advance one new idea, but I will try to treat the matter intelligently and simply, arranging the observations chiefly under three divisions,—when to water, how to water, and what water to use.

1. *When to Water.*—Plants in windows often suffer from the knowledge respecting them being somewhat of a misty, transitionary character. A young lady listens to an eloquent lecture describing some of their most striking peculiarities as living existences, and forthwith she resolves they shall have as *regular* attention as her pet dog and her favourite pony. It is not the attention, however ample, that is in fault; it is the *regularity* of ministering to the real or supposed wants of the plants that constitutes the mischief. The pony, unless in some extra or extreme case, must be

fed regularly, or a healthy digestion and assimilation cannot be maintained. Somewhat analogous processes in plants are dependent on the circumstances of the plant at the time—growing, at rest, or approaching a state of repose—and on its position as respects sunshine and shade, and a high or a low temperature; so that the judicious wielding of the water-can is not so much a matter of regular routine as of thought, intelligence, and adaptation to circumstances. I either do not see correctly or I am greatly misinformed by others if this *routinism* is not gaining a strong hold elsewhere than among amateurs and beginners. "Such and such plants require such and such attentions." "Oh! well, I'm sure I did everything for them they required at such and such a time." Pass the same plants hours afterwards and you may find them suffering dreadfully. The clever disciple of routine can only attend to certain things at certain and regular intervals, and is very apt to mount a hobby-horse of important dignity, or let himself down into a squash of sulks, if it be hinted that *attention* to such trifles is more important in gardening than the most punctilious regularity.

I have, in scores of cases, been mortified with the blank looks of disappointment when, in answer to the question, "When and how often should I water such plants?" I have been forced to reply, "Just whenever they need it, and at no other time." The sunny look and sparkling eye, the truest and most eloquent of all "thank you's," could only be obtained after a series of explanations. "How am I to know when the plant needs watering?" Be attentive to its language, and it will tell you most unmistakably, by showing symptoms of suffering from thirst. Do not wait for the proofs of the suffering, in the leaves being wilted and hanging their heads like a bulrush; for though a plant may recover after several such cases of neglect, in every case it is liable to a great permanent injury. Watch the first signs of distress, and there and then apply the relief. Success in all in-door gardening greatly depends in never allowing the plants to suffer from neglect. The restoring them afterwards, however well done, is merely a make-shift excuse for want of attention. As a general principle, the same rule holds good in respect to a cutting. Never allow its leaves to flag, and it will have roots all the sooner. Some people obtain, and then carry home cuttings in such a way that, but for being thought rude, I have been tempted to tell them it would have been quite as well if they had saved themselves and me all the trouble of getting them.

"But the leaves of such a plant frequently flag, especially in sunshine, and yet the soil seems moist enough, and even when I water it does not always cure the evil." Are you sure that the soil is any more than *seemingly* moist? because some people give such dribbles of water that the surface earth may be moist, and all the rest of the bulk of the ball in the pot dry. There are two simple modes by which a little practice will enable you to decide in a moment. Try the weight of a certain sized pot filled with moist, and a similar sized pot filled with dry soil, and you will soon know, merely by lifting the pot, whether the soil is uniformly moist or not. Strike the side of the pot with your knuckle, just as if you were trying the soundness of a China vessel in a store; if it emits a dull, heavy sound the soil is moist; if the sound is light and more ringing the soil is dry. In the latter case the remedy is obvious—a thorough watering must be given. In the case of soft-wooded plants in general this may be accomplished by watering over the surface, and allowing the saucer to stand nearly full of water for half an hour or so. In the case of small, hair-rooted plants, for which heath soil has been used, a similar mode may be adopted, as the water will in time be sucked up into the ball from the saucer. Without such means you can hardly ever moisten a compact ball of earth, full of roots, that has got very dry. The water will escape by the fissures at the sides of the pot, or fly off at a tangent from the dry interior, like the drops of rain from a duck's wing when she gives it a shake.

Though I have mentioned the above a likely to be suitable in the case of small plants, yet the most simple and effectual mode for redressing internal dryness, and especially if the pots are any size, is to place the pot overhead in a pail of water. If few air bubbles escape it is a sure sign that the interior of the ball is not dry. If they seethe and bubble at the surface, almost resembling an effervescing

liquid, rest assured that the mass of earth is very dry, and just allow the plant to remain in the water for a short time after all air bubbling has ceased. The only likelihood of deception in such a case is when the drainage is perfect, and the compost has been packed among the roots loosely and openly; but even in such a case, though the water will drive out the air, no danger will accrue, because what is superfluous will soon pass away. After such a setting in water no liquid should for some time be allowed to remain in the saucer. Many a fine plant has thus been saved that otherwise would have been lost from careless watering. When the ball is thus thoroughly wet future waterings will always pass readily through it until its interior is allowed again to become dry. Hence another sign of internal dryness. If the water given soaks rapidly away without escaping at the sides of the pot, rest assured there is nothing wrong with the interior of the ball as respects moisture. If the water stands on the surface and does not sink readily there is reason for believing that the pot wants a good ducking in a pail or tub. When there is a regular down-pouring from a thunder storm there is less danger of a flood if the ground was previously wetted, because then it sinks in easily. When it falls on dry ground it cannot get in, and must run as it can along the surface. The air must be displaced before the water can get in.

There is just another reason why your plants may flag, and yet the soil be moist enough, which you will find somewhat explained under the paragraphs on Respiration, Perspiration, and Shading. The roots may be inactive from several causes, such as fresh potting. The whole system of the plant may have been languid from a continuance of dull, cloudy weather; the sun bursts forth in all its brilliancy; there are greater demands made upon the leaves than the roots can in their torpid state properly meet; and in such a case, when the soil is moist enough, instead of deluging it with more water, the proper plans to adopt are, removing the plant further from the sun, shading, or sprinkling the foliage with water until the reciprocal action between roots and leaves is restored.

R. FISH.

(To be continued.)

THE DAHLIA AND ITS CULTURE.

(Continued from page 425.)

CHOICE NEW DAHLIAS.

1. *Cardinal* (Skynner).—A fine variety, well formed, well up in the centre, very constant colour, very bright scarlet; one of the best of its class; averages three feet.

2. *Cherub* (Holmes).—A very excellent variety of a new and delightful colour, a beautiful bright, light orange yellow, very distinct; a deep-petaled flower and very constant, and has received several first-class prizes; averages four feet.

3. *Duchess of Beaufort* (Bush).—Blush white, tipped and edged with dark purple; a really fine variety, of good form, very full in the centre, and constant; averages four feet.

4. *Lady Popham* (Turner).—One of the best Dahlias of its class ever raised; white, delicately tipped with lavender; form excellent, and has received many first-class prizes; averages four feet.

5. *Lord Cork* (Wheeler).—Crimson purple; well up in the centre; deep petaled and constant; very fine; averages three feet and a half.

6. *Midnight* (Fellowes).—A noble show flower of fine form; colour dark maroon; nearly black, edged with light purple; a conspicuous variety in any stand; averages three feet and a half.

7. *Mont Blanc* (Fellowes).—Excellent form and well-shaped petals; colour pure white, never changing till the flowers drop; this will prove a great acquisition; averages four feet and a half.

8. *Mrs. Edwards* (Summers).—Colour a delicate peach lilac; well formed, neat in outline, and full; averages three feet and a half.

9. *Mrs. Turner* (Church).—Colour quite novel—fawn, with yellow at the bottom of each petal; full and constant; averages four feet.

10. *Roland* (Bush).—A well-formed and constant variety; colour a striking white, heavily tipped with crimson purple; averages four feet.

11. *Royal Scarlet* (Keynes).—One of the best of its class; colour a rich crimson scarlet; deep in petal and well up in the centre; averages three feet and a half.

12. *Touchstone* (Fellowes).—A great improvement on that fine variety *Mr. Seldon*, having broader petals; colour a light rosy purple; blooms early; averages three feet and a half.

(From 7s. 6d. to 10s. 6d. each.)

CHOICE OLDER VARIETIES.

1. *Amazon* (G. Holmes).—White, with a heavy tip of crimson lake; three feet and a half.

2. *Annie Rawlings* (Rawlings).—Clear lilac, good form, and medium size; a neat flower; three feet.

3. *Capt. Ingram* (Stein).—Dark crimson; full size; good form; two feet.

4. *Col. Windham* (Turner).—Excellent form and constant habit; colour a deep rose with bronze tip; two feet and a half.

5. *Eclipse* (Wheeler).—A very useful flower; deep in petal and constant in habit; colour very dark purple; three feet and a half.

6. *Empress* (Procter).—White, delicately shaded with lilac; a good, useful variety; three feet.

7. *Lord Palmerston* (G. Holmes).—This variety has every good property; colour a deep crimson scarlet; centre compact and full; every grower ought to procure this variety; four feet and a half.

8. *Grand Sultan* (Turner).—Nearly black, sometimes shaded with crimson; form good; a good exhibition variety; four feet.

9. *Mrs. Wheeler* (Wheeler).—Colour a deep rich scarlet; a fine variety; four feet and a half.

10. *Pre-eminent* (Fellowes).—Rich deep purple; full and constant; three feet.

11. *Queen of Whites* (Bush).—Will struggle hard with *Mont Blanc* or any other pure white variety; a dwarf, desirable variety; two feet.

12. *Rachel Rawlings* (Keynes).—Pale peach; full and constant; four feet.

13. *Robert Bruce* (Bush).—A full and constant flower of a good orange colour; three feet.

14. *Sir F. Bathurst* (Keynes).—A really good old variety; few can surpass it when well grown; colour a rich crimson; three feet.

15. *Yellow Beauty* (Turner).—A free, graceful bloomer; full and constant; of the brightest yellow colour, which is very persistent; a truly fine and desirable variety; four feet.

(From 1s. to 2s. 6d. each.)

NEW FANCY DAHLIAS.

These oddly-coloured varieties have now as fine forms and other good properties as the self varieties. They are, indeed, more valued by amateur growers than the other classes, on account of their new and singularly-combined colours. I have selected a few of the best new varieties.

1. *Cleopatra* (Salter).—Orange yellow, distinctly striped with crimson scarlet; a bright new variety; constant and very double; height four feet.

2. *Carnation* (Keynes).—White, distinctly striped with purple; a new variety in colour; petals well formed, full, and constant; three feet and a half.

3. *Charles Perry* (Keynes).—Ground colour rose, suffused with red, and striped with maroon; good form; four feet.

4. *Conqueror* (Keynes).—Reddish blush, striped and

spotted with dark purple; good form; three feet and a half.

(10s. 6d. each.)

CHOICE OLDER FANCY DAHLIAS.

1. *Baron Alderson* (Perry).—Bright orange, with a white tip on each petal; large and beautiful; two feet and a half.

2. *Butterfly* (Salter).—Yellow, striped and spotted with red; good; two feet.

3. *Duchess of Kent* (Knight).—Pale yellow, striped with white; extra fine form and very beautiful; four feet.

4. *Gloire de Kain* (Cailloux).—White, striped and spotted with maroon; four feet.

5. *Inimitable* (Salter).—Bright orange salmon, striped and spotted with deep crimson; very fine; three feet.

6. *Magician* (Paulet).—Dark purple, tipped with white; fine form and very constant; three feet.

7. *Marvel* (Pope).—Yellow, densely spotted and striped with red; fine; three feet.

8. *Pigeon* (De Kniff).—White, with rosy salmon edges; fine in shape and constant; three feet.

(1s. to 2s. 6d. each.)

T. APPLEBY.

NOTES FOR APRIL.

AFTER the fine, dry February and March of this season, which were most favourable for seed sowing, the soil, after the severe frosts and drying winds, being in a healthy and pulverised condition, we may, by judicious management and careful attention to the growing crops, expect abundant produce.

As the season of more active vegetation is approaching when genial showers descend to refresh the earth, so also do slugs and snails crawl forth on a mission of destruction to the young and sprouting seed plants. It is necessary to prevent their depredations by all means possible. Soot or a little salt may be strewed on the ground; two or three applications of quicklime, too, in showery weather is an excellent remedy, and by searching early in the morning or late in the evening their numbers may be diminished; but the constant use of the hoe and surface stirring will best destroy the young broods and invigorate the growing crops.

Sowings of *Cauliflower*, *Curled Kale*, *Broad Beans*, late sorts of *Peas*, *Savoy*s, and a good breadth of *Turnips* should be made; also a few dwarf *Kidney Beans* in a warm corner, to be protected when they vegetate; but if sown in pots or pans, and transplanted in May, they will be more certain of produce; and also a sowing of *Scarlet Runners*. *Early Purple* and the *White Cape Broccoli*, and the *Walcheren*, if sown now, will be fit for late autumn use. A second sowing of the *Walcheren* at the end of June, and a third sowing a month after, will give a supply of this most invaluable Broccoli for nearly the whole year round.

Beet, a most profitable and nutritious vegetable, to be sown about the middle of the month on a deep, rich, and rather sandy soil. The *Dwarf Red* and yellow *Castlenaudari* Beets are the best flavoured. The seed to be sown in drills two inches deep, two or three seeds to be dropped together about a foot apart in the drills, only one plant being allowed ultimately to remain, and eighteen inches from row to row; to be covered about an inch deep with fine soil.

As soon as the *Onions*, *Carrots*, and *Parsnips* are seen breaking through the soil, if the weather is dry, the crust should be loosened by a short-toothed rake, and the hoe afterwards applied to keep down weeds. If any seedlings are in tufts let them be thinned out in time; and if any blanks occur in the crops fill up by transplanting them in showery weather.

Also the seedlings of the early-sown *Cabbages*, *Brussels Sprouts*, &c., to be transplanted a few inches apart into beds, to produce fibrous roots and stocky plants for final planting. *Celery* to be transplanted in a couple of inches of soil, and three or four inches of rotten dung on a hard bottom; to be liberally supplied with water, as any check by drought to its luxuriant growth will start it to seed

Fruit trees should also receive attention, as the arrangement of their growth can now be more easily directed by removing the young shoots from places where they are not wanted, and a shoot should be encouraged from the base of the fruit-bearing wood to bear next season. The great object is to maintain a healthy fruit-bearing condition by removing all superfluous wood, which should be done gradually a little at a time, that the system of the tree may not receive a sudden check, which sometimes happens if many shoots are taken off at once, when the fruit ceases to swell and prematurely falls off.

It will now be necessary to calculate the number of plants that will be required for each bed in the flower garden, and to increase the stock where there is a deficiency, and to arrange the colour of each bed so as to produce either a contrast of colours or a complimentary effect for a striking or harmonious display of flowers. A rough map of the beds, coloured as intended to be planted, would be a useful guide to the best selection of colours. If there is any difficulty about the selection of colours, and if all that has been repeatedly written by the best authorities on the subject has been overlooked or forgotten, we would advise such parties to consult their lady friends, who are generally most discriminating in the arrangement of colours.

Evergreen shrubs should be now looked over, and all dead and unsightly branches removed. The judicious application of the knife would give many shrubberies more natural and pleasing features than we generally see. I suppose that the old-fashioned practice of digging amongst shrubs, and cutting up the roots in large spadeful, is now very generally discontinued; a moment's consideration must suggest the barbarity of the practice.

Annual plants to be thinned out in time, that each may develop its peculiar habit of growth. The branching tendency of *Mignonette*, which is so generally crowded together, will afford an example that may be applied to other things.

Chrysanthemums, on account of the splendid new varieties lately raised by Messrs. Salter, Versailles Nursery, Hammersmith, are becoming very general favourites; they are cheap, and easily increased at this season by cuttings, and require but ordinary attention to produce a gay display in the autumn and early winter months. Cuttings should be struck now, potted off, and stopped at the third joint, which should be repeated as they make fresh shoots, planted out in May, supplied with water in dry weather, and kept topped until the end of July, taken up and potted in September, and watered; they will flower most satisfactorily, without losing a leaf or showing the least indications of having suffered by the removal from the open ground. A similar practice, without the stopping, is successfully adopted with the new and improved varieties of *German Asters*.

Dahlia roots, if not already done, should be covered with soil; the shoots, when two or three inches long, taken off and potted; and the old roots divided to increase the stock.

Although it may appear trifling, it may be useful to say that *Carnations*, *Picotees*, and other such florists' flowers in pots, should be watered in the morning, as they are very apt, when watered in the evening, to be chilled by the cold at night, when gangrene and other diseases ensue.

Greenhouse plants during "the uncertain glory of an April day," with frequently frost at night and a scorching sun in the day, will require attention in shading during strong sunbursts; but if the roof is covered with creepers a little management in training them will effect the object with the least trouble. The lately-shifted plants, when they have fairly started into growth, to be stopped as they may require to make them bushy, and a gently growing and moist atmosphere be kept up, sufficient to produce a dew upon the plants, which is a most pleasing sight in the morning, and a sure indication of their healthy state.

As *Rhododendron arboreum* and other greenhouse varieties are rarely seen to flower well, it may be useful to know that the critical point of success depends upon shifting them as soon as the flowers begin to fade; to be then excited into luxuriant growth in a temperature between 55° and 60° for three or four weeks, when the watering is to be gradually discontinued, and merely a sufficiency supplied to keep them from flagging; then place them in a cool, sheltered situation out of doors. The great object to be aimed at is to prevent a

second growth, which is the principal cause of the failure of blooms.

The seeds should now be sown if *Balsams*, *Cockscombs*, and *Globe Amaranthus* are desired for summer and autumn decoration. The *Cockscombs* to be grown with a good brisk bottom heat in a hotbed frame or forcing pit. A single flower-stalk of great strength is requisite, the protrusion of which should be retarded as long as possible consistently with the rapid growth of the plant. The treatment they require as to high temperature is similar to the Pine Apple in many particulars.

Chinese Primroses to be sown in light soil, and placed in gentle heat; when the rough leaf appears, to be pricked off into pans filled with equal parts of decayed leaf mould and silver sand. Rooted cuttings for bedding-out purposes to be potted off, and encouraged to grow by the application of a gentle heat, frequent syringings, stopping the shoots to induce a robust, bushy growth, and by shading during bright sunshine. When well established in their pots it is necessary to prepare them for their final transition to the open ground by removing them to a cold pit or frame, to be kept close for a short time, and gradually hardened off by the admission of air.—WILLIAM KEANE.

A FEW REMARKS ON PLEROMA ELEGANS.

THOSE who are favoured by having THE COTTAGE GARDENER numbers to read week after week must not only be interested, but much edified, by the lengthened articles brought before them by its numerous and very able correspondents, by whose unwearied exertions secrets amongst nurserymen and gardeners are brought to light. Instead of keeping the peculiar mode of cultivating a plant or class of plants to one's self, the great aim now, and a right one, is to bring it before the gardening world, that all might have the advantage of knowing it, and by thus aiding each other horticulture is raised higher in the estimation of those around us. Numerous as the plants spoken of are in your numbers, I have noticed but few articles on the culture of *Pleroma elegans*, and should the following hints be deemed worthy of a place in your paper, and at all beneficial to any one growing that truly valuable plant, the object of my writing will be gained. Whilst there are many perfectly acquainted with its culture, there may be some about to commence, to whom a few remarks may not be out of place. But before giving its culture I may add, it seems a matter for surprise that after *Pleroma elegans* has been exhibited for years by some of the first nurserymen of the day with perfect success, and admired by thousands of spectators, it has not yet become a plant for competition generally, either as a single specimen or in collections, and amongst the great number of greenhouse plants annually shown the *Pleroma* hitherto has been found wanting.

In commencing the culture it would be best to order a plant or plants from the nurseryman, or, if present, to select them yourselves, as you then would be enabled to choose nice sturdy young plants. This is preferable to risking your chance by cuttings from neighbours and others, as I suspect not a few have found more difficulty in raising young plants than in all their after culture. It is also good for the trade, as the many large nursery establishments cannot be supposed to maintain their positions unless supplied with orders. Having, then, procured your plants, and supposing them to be in 32-sized or six-inch pots requiring shifting, choose so many 9½-inch or 10-inch pots, drain moderately as for *Epacris*, *Chorozemas*, &c., shaking some rough siftings of leaf mould over the drainage. The soil should be equal portions of peat and fibry loam, preferring the brown always before the yellow loam, and a sufficient quantity of silver sand to keep the soil open for the free passage of water, of which it will require a liberal supply. In potting use rough and fine together, pressing it just as you would for *Epacris*. This performance being over, where are they to go? The stove being too hot, and the New Holland house rather too cold for them, an intermediate house is consequently necessary to insure perfect success. A house kept from 38° to 50° night temperature is the best heat, allowing it to range between 60° and 70° by day. No doubt

some are obliged to lodge them in the New Holland house or Heath house; but should such structures be exposed to a north aspect *Pleroma elegans*, in most instances, is found to suffer from the cold, showing it by the foliage becoming brown and much curled. As the newly-potted plants begin to grow it may be found that, although two plants stand side by side, the one may produce short-jointed wood, whilst the other produces long shoots. In the first, stop at every third joint; and in the second, stop every shoot of this year's growth; but none of them should be stopped after the end of July. Tie, after potting, to neat sticks as low down as they can be brought, as that will insure their keeping in good shape in coming years. See that they are placed so as to get plenty of room all round, that the sides be not injured by being too near other plants. Repotting will not be required until the following February. Having then prepared the same kind of soil as before, turn them out, and shift them into four sizes larger, and as soon as they have made the second shoot pinch each of the top ones off, and fresh stake and tie every one. Throughout the summer and autumn supply liberally with water, and let them grow without more stopping, and the cultivator may reasonably expect a few blooms by the middle of the following June. Should he, however, find, on the contrary, no bloom that year, I would say, Be not discouraged, for the next following seasons will amply repay for its want of them then. This shows *Pleroma elegans* takes some time to become a flowering plant, and, consequently, must be patiently dealt with. Being then established in 14-inch pots, the following summer will find them laden with bloom, and one of the first objects of attraction in the house. I would now advise repotting to be performed after flowering for the future, and to those not requiring large plants they may be kept in the same 14-inch pots until the next year's flowering is over; but a shift into three sizes larger is preferred: soil, &c., as before. After this changing of pots it will not be necessary to repeat it every year unless large plants are in request, as *Pleroma elegans* will do very well by being shifted every alternate year; and when this is practised liquid manure is necessary—either sheep manure water or guano. I have seen the last mentioned, when given twice a week throughout the growing and flowering season, to agree with the constitution of the *Pleroma* all that could be wished, imparting a fine, dark, glossy green to the foliage, bringing its hundreds of flowers perfectly expanded, and gaining for them that beautiful purple colour so much desired amongst greenhouse plants, and which, when fully developed, presents to our view one of the richest varieties of plants which Mr. Lobb obtained for the Messrs. Veitch, of Exeter and Chelsea, from the sides of the Organ Mountains. When this plant is more generally brought before the wealthy of our country and the people at large it cannot fail to be called by all their pet, gem, *beau idéal*, or whatever else may be their favourite term.

P.S.—I omitted saying that the *Pleroma* should be shaded in common with other greenhouse plants, especially when in bloom, as it preserves them much longer; and when protected from hard winds and heavy rains I have seen it do well out of doors during summer.—G. WEBBER, *Redleaf*.

GARDENING NOTES FROM THE CONTINENT.

HAMBURGH.

THE horticulturists in the neighbourhood of Hamburg have two great impediments in their way; first, the natural soil is a dry, hungry sand; and, secondly, they have a most inclement climate. Even now there are vast masses of ice floating in the Elbe, and the thermometer only stands a few degrees above freezing in the middle of the day. This severity of the climate renders it necessary to have double glass to all the hothouses, which, of course, makes the expense of building them much greater, and is, therefore, a serious drawback to the growth of stove plants in North Germany.

The Botanic Garden is pleasantly situated just outside the east gate of the city. It overlooks the river-like moat, and stands opposite to the old ramparts, which are now laid out as public walks. In summer it must be very pretty;

but now, from the want of all evergreens, even the most common, it looks very dreary. The garden is small, and the houses few in number, and, as is the case in all continental botanic gardens, the plants are fearfully crowded. There are good collections of Palms, Cycadaceous plants, and Orchids; but, from their being so huddled together, it is impossible to grow them as they deserve. There is a house devoted in summer to the growth of the *Victoria regia*, with a tank twenty-two feet in diameter. This house is now used to winter some Conifers and shrubs which require a slight protection. It is worthy of note that the young plants of *Victoria* which I saw in the propagating house were raised from two-year-old seed. I should have doubted the statement had not Mr. Otto, the director of the garden, assured me of its truth. The seed had been kept in bottles of cold water, and afterwards, when placed in a heat of about 85°, it germinated very well. The only plants in bloom here were a few common Acacias and some bulbs. In the stove was a nice plant of *Hebeclinium ianthinum*, producing its Ageratum-like flowers profusely. The same may be said of *Thysacanthus rutilans*, here called *T. Schomburgkianus*. There was nothing new to be seen in this garden, the finances of which appear to be somewhat cramped, so that it is necessary to eke them out by the sale of duplicates.

Mr. Booth's nursery is a good walk from Hamburgh, through Altona and Blankenese; but it is easily found, as everybody knows "the English gardener." This garden well deserves the high character it possesses; it is, undoubtedly, one of the best nurseries in North Germany. Several new houses have lately been erected here for the growth of Orchids and New Holland plants. The Orchids, of which there is a large collection, were in fine health. Among those in flower the rarest was *Uropedium Lindeni*, which had five flowers open, presenting, with its curious tail-like petals, a very interesting appearance. It is a native of Caraccas, and was introduced by the person whose name it bears. There were good specimens of a dozen kinds of the Pitcher Plant, the best being *Nepenthes lanata*, *N. ampullacea picta*, *N. sanguinea*, *N. Hookerii*, and *N. Rafflesiana*. I noticed in this house a variety of *Tradescantia discolor* with striped leaves, and with it a good stock of the beautiful white-striped *Maranta vittata*. There was here a splendid specimen of the Rice Paper Plant (*Aralia papyrifera*); it had eight leaves, each of which was two feet in diameter. The pot in which it was growing was only fourteen inches across. The white variety of *Lapageria rosea* is, I am afraid, almost lost in England; I was glad, therefore, to see that there are plants of it here. The Oak is a favourite tree in this garden. Mr. B. has 120 species of this genus; the greater part are not, however, hardy.

A long span-roofed house was devoted to a fine collection of young Conifers. It is a poor sign for the gardener when he finds it necessary to grow the Deodar, and nearly all the favourites of our English lawns, under glass. Among the few that have stood the last three winters unprotected are *Picea Pinsapo*, *P. Nordmanniana*, and *Cephalotaxus Fortunei*. In another span-roofed house were some tolerable specimens of hard-wooded plants, most of them showing plenty of flower-buds, but only a few in bloom. Among them, however, was the pretty *Hardenbergia longiracemosa*.

Mr. Booth has also a very extensive nursery for forest trees—"tree school," as the Germans call it. It is divided at frequent intervals by hedges of Hornbeam and Spruce Fir.

The flower-shops, which are numerous in Hamburgh, are gay with Azaleas, Persian Lilacs, Hyacinths, Violets, Chinese Primroses, &c. The common Ivy is a great favourite here as an in-door ornament for dwelling rooms, and the effect produced by it is in many cases very pleasing. Trained round the window-frame its dark green leaves set off to advantage the flowers of the Hyacinths which usually accompany it. Nice plants of Ivy in pots can be bought for two-pence each.—KARL.

MAKING SMALL QUANTITIES OF CHARCOAL.

As charcoal is of great importance in the cultivation of many kinds of plants, and as cultivators of plants generally do not understand the manufacture of it, in answer to "AN OLD SUBSCRIBER," at page 260 of the present volume of

THE COTTAGE GARDENER, I will give my method, which will be found to answer well for those persons who may be disposed to try it until a better be substituted.

My practice is to commence by taking a sufficient quantity of split wood that will easily ignite on the application of fire, and with a sharp instrument cut it into lengths varying from about three to nine inches. I then place it in a dry shed until I have prepared the whole of the wood which is to be burnt into charcoal at one time, and to preserve it from being wet; for I would have it particularly understood that the drier it is kept the sooner it will take fire when the whole is piled for burning, which will save much trouble and probably partial failure in the operation.

The quantity of dry wood to be prepared will depend upon the size of the heap when complete and ready for being set fire to. A heap that measures about four feet in diameter at the base, and from four and a half to five feet high in the centre, will require a quantity sufficient to form in the centre of it a circular heap about eighteen inches through at the base, and twelve high in the centre.

Charcoal is generally made, "on a large scale," of the boughs of trees that have been cut down for sale, or of the underwood and prunings of trees that take place occasionally on the estates of land proprietors. The wood should be as firm as can be obtained, and as free from sap as possible; but if it cannot be had of this kind take the best at command, and cut it also into lengths of about six, nine, twelve, and eighteen inches; and when it is cut be particular to make the lengths into three loose heaps, i.e., those lengths that measure the least in diameter into the first heap, those of the greatest diameter into the second, and those which range between the least and the greatest diameter into the third. Also prepare a smooth, circular piece of wood from four and a half to five feet in length, and six inches through. Attention to these things at this stage of the process will greatly economise the amount of labour which will afterwards have to be bestowed upon the building of the pile.

The wood being thus prepared, next proceed to select a convenient plot of ground upon which to burn it, and which, I would remark in passing, might be the corner of an adjacent field, the Melon ground, the compost yard, or, for want of these, the centre of a spare quarter in the kitchen garden.

The ground being fixed upon, level and make it firm by beating it with a beater or the back of the spade, and then, in the morning of a fine day, when the weather looks settled, wheel the wood to it, keeping the heaps, as already, separate from each other when placed round the ground where the principal heap is to be formed, and also have brought from the field or common a cart-load of sound turf, and placed at a proper distance from the material already on the ground.

Into the centre of the ground, which has been made even with a mallet, strike one of the thick pieces of wood, which, I would observe, must have been pointed at one of its ends when the rest of the wood was being prepared. Allow it, when fixed in the ground, to stand about nine inches above the surface of the soil round it; begin to form the pile by placing a few of the shortest lengths of the dry wood equally round the bottom of it, and then against these others, with one end resting on the ground, so that the end which is the uppermost will incline towards the centre of the heap. They must be placed as closely to each other as possible in an imbricated style. In this manner proceed until the heap reaches to the top of the stake. Afterwards mix with the wood a quantity of shavings which have been got from the carpenter's shop, which will cause the wood to ignite sooner than it would do if they were not used. The form of the heap, when of the dimensions above stated, should be that of a cone, on the point of which must be mounted on end the long, smooth piece of wood which was made ready for the occasion as already stated. Be particular to make it firm by putting the end of three rods into the ground, so as to form the three points of a perfect triangle, and fastening the other ends of them to the top of the wood. Then take about one-fourth of the lengths which form the first heap of wood, and tile-form layer them equally all over the central pile; also take the whole of the second and third heaps, and use them one after the other in the same way, finishing with a layer of the three-fourths which remain from being used of the first heap.

The reason for arranging the wood in layers in this form is, that that which is of the greatest diameter, and which occupies near the central layer, is no more than ready for being drawn when the outward one is perfectly burnt into charcoal, and, consequently, the pile is ready for being taken down and the charcoal housed.

The piling of the wood being completed, cover it equally all over with the turf which is close at hand ready to be used; place the grass side downwards, and on the top of it a layer of sifted soil from one and a half to two inches in depth.

Having done this take out of the centre of the pile the smooth, perpendicular piece of wood, and deposit some light combustibles, in which a quantity of congreve matches have been mixed, on the top of the dry wood in the centre, by letting it drop down the hole out of which the wood was taken. Set fire to it by casting a few live embers upon it, and when it has caught fire feed it with a small quantity of wood, and then close up the hole with a little turf, so as not to allow the fire to escape. Afterwards take a rod sufficiently long to reach to the centre of the pile, and with it perforate the sides, letting it run to near the centre. By these punctures a ventilation will be created that may be regulated so as to keep the fire equally burning throughout the whole of the pile. As the fire continues to burn it will require to be fed occasionally with suitable material. This must be done by uncovering the open space in the centre which was left for the purpose, and carefully letting down the things with which to feed it, and then covering up the orifice as before.

The fire in its progress will consume certain parts of the turf and soil which serve as an external covering to the pile, and also to keep the fire smouldering, instead of issuing in flames, which is a point in the process worthy of being noticed by those persons who wish to have good charcoal with little "loss of material." Therefore, on the first indication of the fire coming through to the surface, in whatever part of the pile it may be, immediately cover the place with turf and sifted soil, which must be always at command.

The length of time it takes to burn wood into charcoal varies according to the softness or hardness of it. Oak takes the longest, and is generally thought to make the best, and on that account it is to be preferred to any other kind.

Now, if the pile during its burning be properly attended to the "loss of material" will be trifling. The ashes or refuse are, I consider, amongst the best articles that enter the kitchen garden for top dressing the beds of Turnips, Carrots, Parsnips, Dwarf Beans, &c.; and for first early Potatoes, either mixed with any other kind of manure or alone, are equal if not superior to anything I have used.—B. B., near *Halifax*.

COWSLIP VINEGAR.—Boil five pounds of brown sugar in fourteen quarts of water for ten minutes; then strain it through a cloth, and when milk warm put in four quarts of unpicked cowslips, or six of picked, and two pennyworth of yeast to work it well. Stir it frequently for two or three days; then tie a cloth over it, or brown paper pricked, and let it stand in a warm place for two months, when it will be fit for use. It is quite equal to white wine vinegar.

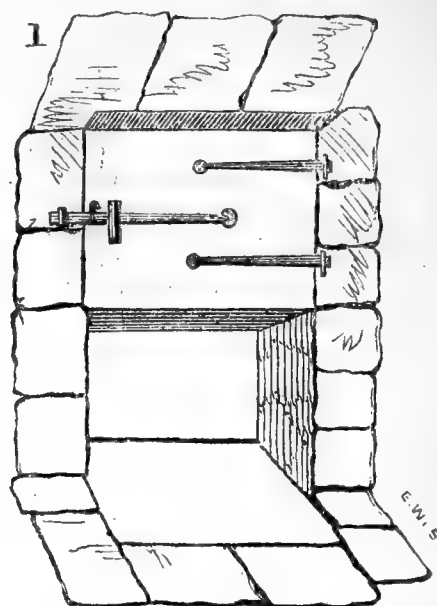
N.B. The unpicked cowslips, or those with the stalks on, make the best vinegar.—W.

STOVE AND HOT-WATER APPARATUS.

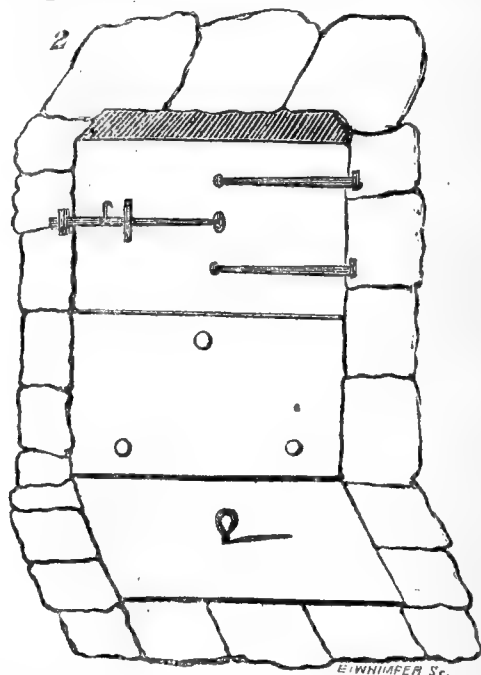
I now beg to send you full particulars with plans of my stove and hot-water tank for the benefit of amateurs in general. Should any one wish for a more minute inspection I shall be happy to see them, and will explain it with pleasure. I am desirous that it should be made generally known, as I feel certain it would give satisfaction, it being peculiarly adapted to those who do not keep a regular gardener. I have also invented a portable machine for builders, in which this stove plays a prominent part, wherein and whereon timber of different lengths may be dried, glue-pots kept ready, the journeyman's dinner cooked, and the shop warmed, one of which is now in use by Mr. George Bravau, builder, &c., Bridstow, near Ross, Hereford, to whom reference may be made.

I now proceed to give you the details in full.

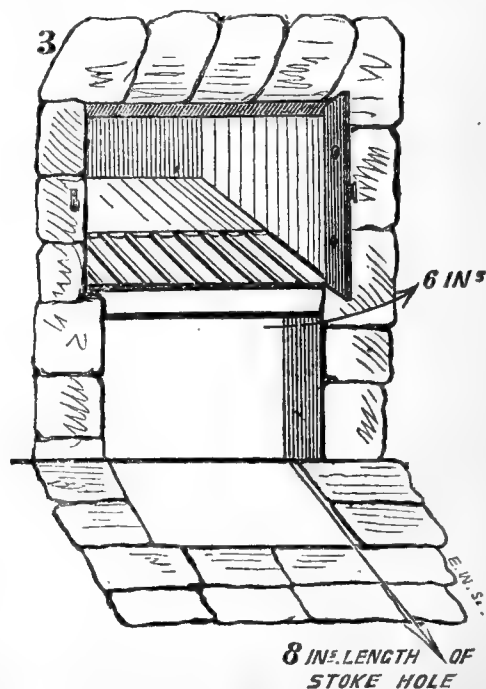
PLAN OF STOVE AND HOT-WATER TANK FOR PIT OR GREENHOUSE.



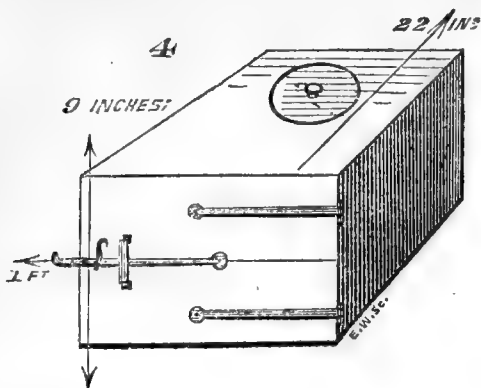
1. Showing external appearance of stove without damper, but with ash pit.



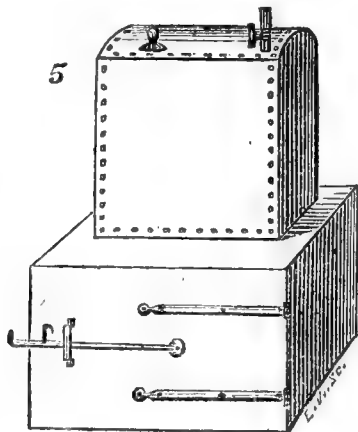
2. External appearance of stove with damper attached.



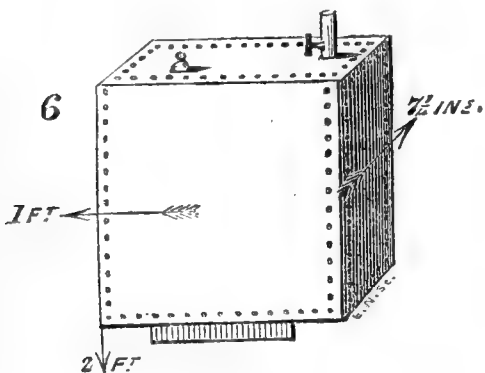
3. Appearance of stove without door, showing bottom plate of stove with bars.



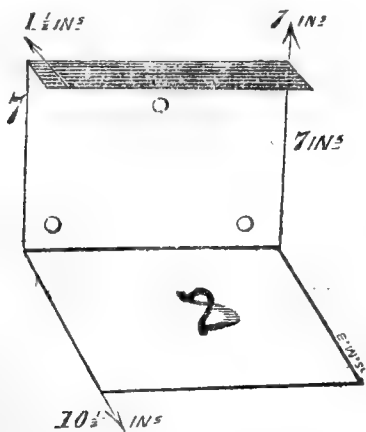
4. Stove detached from flue, with hole nearly in the centre to admit cover or forcing tank if required.



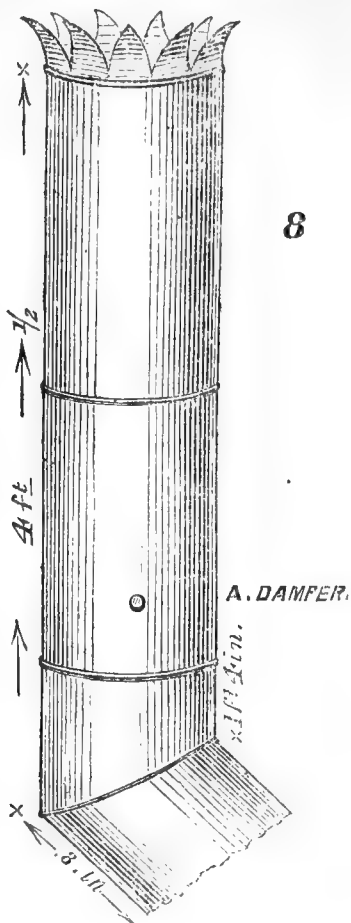
5. Stove with forcing tank attached.



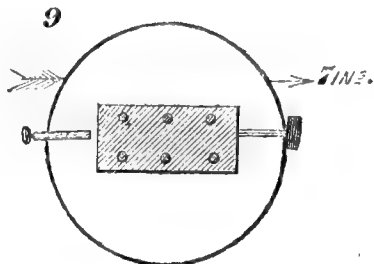
6. Forcing tank detached from stove.—N.B. This has a self-acting-valve in it which opens to let off the steam when the water is above 212°.



7. Damper detached from stove.—N.B. This covers up the ash pit, prevents too great a draught getting to the fire, and keeps the stove tidy and neat.



8. Chimney of iron.



9. Damper in chimney to retain heat and regulate fire.

Some little explanation is necessary to show the advantages gained by this stove over others, and its peculiar adaptability to amateur gardeners.

- 1. Its cheapness as compared with others.
- 2. Its cleanliness.
- 3. Its evenness of temperature.
- 4. Its little or no trouble.
- 5. Its very small consumption of fuel.
- 6. The convenience of attaching or detaching a forcing tank for Fernery, &c., at pleasure.

SIZE OF PIT.

Inside measure, 9 feet 1 inch long; 3 lights, each 5 feet 10 1/2 inches by 3 1/2 feet; height inside, 6 feet 9 1/2 inches; width, 5 feet 6 inches. Separate frame.

COST OF PIT, STOVE, AND TANK.

	£	s.	d.
Bricks, and carting the same two miles ..	3	0	0
Frame, glass (Hartley's patent) lights, handles, paint, &c.	4	8	9
Lime	0	10	0
Mason, &c.	0	19	0
Shelves and fittings	0	18	6
Stove, tank, piping, and damper	3	7	6
Additional frame, separate, but heated by this	0	18	0
	£14	1	9

1. Ordinary greenhouse and pit stoves are constructed by

a simple grating. This may be at first sight cheap; in the end they are very costly. They consume so much fuel, the draught being so great. The estimate given for this stove, tank, and piping, is, in my idea, high, and I am quite sure they may be made at about £2 10s. instead of £3 7s. 6d., if made at a foundry instead of an ironmonger's. It may be fitted to any greenhouse or pit that is not used for hot water, or the stove alone may be fitted in lieu of any one now used for that system. I am not speaking of the cost of the stove, &c., alone, but also of its cheapness in working, 2½d. worth of coal being sufficient to keep it in action night and day for one week. This may be liable to a rise in districts where coal is expensive.

2. We are all aware that ordinary stoke-holes are dirty places at best. With this, however, it is different. Any female servant may feed this fire without soiling either clothes or fingers, the damper No. 7 entirely obviating dirt and dust, which fall into the ash pit behind it.

3. Evenness of temperature, a most important feature at all times. To show this I will give examples. During ten days of very frosty weather a temperature of 42° was kept up night and day. During the night of the 27th of January the thermometer outside was down to 18°; in the pit it stood at 46°, and kept at that temperature steadily.

4. As to trouble, to explain this would be tedious. Supposing that a fire is lighted at 6 p.m., at 9.30 it will be made up for the night. This will last until 8 a.m. next morning. It is then stirred and the fire freed from dust, and this will last until 12 at noon, when a little fresh fuel may be given to it. It seldom requires cleaning out, and even that is not a dirty job.

5. The fuel used is cinders and the riddlings and sweepings of the coal-hole: the finer the dust the better the fire. The quantity of fuel burnt in twelve hours would be about four pounds, or thereabouts.

6. The tank may be detached if necessary, but it is in a confined space like a pit—a troublesome job. It may, however, be done in a very short space of time, say about twenty minutes.

It is impossible for me to detail the numerous little advantages obtained by this invention, and as personal inspection is so much more satisfactory, I look forward to the pleasure of seeing "AMATEUR" or any of his friends, and shall be delighted not only to answer any questions, but to give any information in my power.

I give you a register of the hardest weather we had this winter, taken at 7½ a.m., showing the temperature inside and outside my greenhouse.

1857.

Jan.	Weather.	In.	Out.	Remarks.
12	Frost	48	28	
13	Damp	47	34	
14	Frost	44	28	
15	Frost at night	45	36	Morn. Rain
16	Frost	51	30	and wind.
17	"	48	38	Rainy morn.
18	Mild	T.	42	
26	Frost and wind	46	28	Wind N.E.
27	"	42	28	" "
28	"	42	28	" "
29	" and snow	47	20	
30	"	40	26	
31	" and sleet	43	30	Windy.
Feb.				
1	Frost	42	24	
2	Cold wind	43	34	Bitter.
3	Snow and frost	42	30	
4	Frost and snow	38	16	

—W. H. WARNER, Oaklands, Ross, Herefordshire.

QUERIES AND ANSWERS.

PRESERVING PRIMULA SINENSIS.—FAIR MAIDS OF FRANCE.

"Will you inform me what plan I can adopt to save some plants of *Primula Sinensis* which have done blooming; and

whether, if I succeed in nursing them through the spring and summer, they will repay me for my trouble by blooming next season as freely and of as brilliant tints as they have now done? I must tell you that my means are limited to the windows of a cottage, where I raised them from seed, and a small border, where I kept them out in the air until September last.

"Will you also oblige me by telling me the scientific name of the plant I have always known as the *Fair Maid of France*? I cannot make any one here understand what I mean. Perchance, if I had the proper name, some of my friends might bestow their charity, and give me the plant; for gardeners are a good-natured race to those who, like myself, love the beautiful results of their industry, and who are not ashamed to confess that they would dearly love to become the possessor of flowers did their pockets admit the outlay."—PRIMULA SINENSIS.

[You can do nothing with the plants of *Primula Sinensis*. Some of the very best gardeners in the kingdom, with all manner of houses, pits, and frames at their disposal, can do no more with them than you can; that is, sow them, flower them, and then let them die, or keep them till they are either dead or look so bad that to keep them any longer would be a disgrace. One out of three or four thousand manages to do them like the Messrs. Jackson, of Kingston, and like Mr. Edwards, of Chiswick House, and Mr. Wild, of Ipswich; but all the three could not "do" them with your convenience.

Fair Maids of France is a popular name for the double variety of *Ranunculus aconitifolius*. This is called *White Bachelor's Buttons* by some, and much about it will be found contributed by Mr. Weaver to our 176th number. It is figured in the *Botanical Magazine*, t. 204.

TREATMENT OF IMPORTED CAMELLIAS.—RENOVATING THE SOIL OF A ROSARY.—SOWING LILIUM LANCIFOLIUM SEED.

"How should I prune, and to what extent, some *Camellias* imported last autumn? They mostly average about twenty inches in height, and in many instances are formed of long, straight shoots without any side ones.

"What should I do in renewing the soil of a *Rosary*, mostly of French Roses, and which appears nearly worn out?

"How should I plant some seeds of the *Lilium lancifolium* saved last autumn?"—HIGHFIELD.

[See page 396 as respects the *Camellias*, and many other places, and read carefully the story of a *Camellia* told lately by Mr. Errington. It contains the very pith of right treatment for the *Camellia*. Instead of pruning such young plants, unless they are very straggling, merely nip out the terminal bud, and keep the plants warm and close afterwards until they are growing freely.

With respect to the *Rosary*, better move the plants to a fresh place, or take away a portion of the soil, and introduce good fresh loam enriched with rotten dung.

We would sow the seeds of *Lilium lancifolium* in peat and loam, and keep the pots or pans in a cold pit, where mice and slugs could not get at them.]

BLUE BEDDING FLOWERS.

"Will you inform me which would be the best flowers for a bed of blue? I had the *Salvia patens* last year, and it grew too tall. I want one about one foot high, and to come of the colour of the *Salvia*."—L. S. D.

[We cannot get blue flowers "to order." There is not a good blue flower for a bed between the *Salvia* and the little *Lobelias* except the *China Larkspur*. *Salvia patens* ought to be "got up" as early as possible, and the first shoots which start for bloom should be cut down pretty close. The next growth should be trained down from the beginning, and thus by cutting and training we get them much lower and far better.]

MANAGEMENT OF A YOUNG HOLLY HEDGE.

"Will you inform me of the proper treatment of Holly plants in order to make the best and thickest hedge? I have just planted a number of young and thriving plants in soil admirably suited to them, which has been trenched to a depth of from two to three feet. The plants are about eighteen inches high. Should they be left so, or should they be cut in close to the ground, in order to make them branch out and thicken, so as to form one of those beautiful and impenetrable hedges which I have often admired in Kent and in Somersetshire?"—HERBERT S. HAWKINS.

[The young Holly plants ought not to be cut for the first three years after planting. If they are planted as close as one foot apart they never require to be cut down like "quick," only to cut the longest of the side-shoots to a regular surface on both sides; but if any of them should shoot up a long leader, much longer than the average of the rest, those should be cut back to that average about the end of April or in July. The most important practice is to mulch a young Holly hedge for the first year or two, and to water the plants regularly through the summer.]

PROPAGATION OF VARIEGATED ALYSSUM.—
ESCHSCHOLTZIA AS AN EDGING.

"I propose having a bed of scarlet Geraniums with edging of variegated Alyssum. Will the latter flower from seed this year? and should I sow it now where it is to stand, or would it be better to transplant the seedlings?"

"Would an edging of *Eschscholtzia* (yellow) look well for another scarlet bed? Will the following blow this year from seed just sown in heat? 1. *Commelina celestis*. 2. *Eccremocarpus*. 3. *Lophospermum scandens*. 4. *Salvia patens*."—MANCHESTER.

[Your question about the *variegated Alyssum* has been answered many times in these pages. The variegated kind does not seed, or if it does occasionally the seedlings from them will come as green as leeks. There is no way for having this kind true except from cuttings.

The *Eschscholtzia* will make a splendid edging; but you must allow it eighteen inches, or rather more, and it must be sown every season about this time. We have rarely missed an edging of this plant since 1842. If the old roots of *Eschscholtzia* are dug up carefully in the spring they would make the best rock plants we have if they were built in the new rockwork as the work proceeded. The *Commelina* and *Salvia patens* will flower in the autumn from spring-sown seeds; but the other two must not be depended on to flower much, if at all the first season.]

RANUNCULUSES EATEN BY SLUGS.

"I have a bed of Ranunculuses which were planted in November, and were very strongly manured. They came up about three weeks ago, and for some time looked very healthy indeed; but within the last week they have been almost entirely eaten up with worms. Would you be so good as to inform me what plan I am to adopt to save my plants? I understand that sea sand and pounded sea shells mixed together and put closely round the plants are an excellent preventive against both worms and snails; but as these cannot be readily obtained by me I shall be obliged to resort to something else."—RANUNCULUS.

[The slugs and snails, not the worms, have done the mischief, and the only means of getting rid of them is by laying baits for them, and to destroy them when caught. Brewers' grains laid in little heaps along their haunts are Mr. Barnes' receipt for catching them, and it is one of the best. He goes out at night and collects them on these heaps. Others lay cabbage leaves, under which they take shelter. Others, again, dip the cabbage leaves in greasy water, and say that is more enticing, and many go out to look for them after warm showers in the spring and early part of summer. We adopted this last method during a whole season, and caught thousands of the marauders, and we have not been troubled with them since. We have no faith in sea sand,

nor in soot, which they dislike very much. You must kill slugs outright. It is of very little use to try to frighten them off your premises.]

DISTINGUISHING ROOTS OF DAHLIAS.

"Will you inform an old subscriber whether there is any way by which he may be able to distinguish the dwarf *Zelinda* Dahlias from other taller kinds at this season, the roots having been accidentally mixed?"—R. H. C.

[No; there are no means of distinguishing one Dahlia root from another, or young plants either for some months. It will be the end of June before most of the Dahlias will show by their free growth that they are not dwarfs, like the *Zelinda*.]

NOTES FROM PARIS.

Among other improvements lately carried out in the grounds of the *Bois de Boulogne*, an immense cascade has been formed in addition to the small ones which I formerly noticed. It was only very recently opened for the first time, and the effect is worthy of the magnificent lake and plantations in this part of the environs, which may be considered the west end of the French capital.

A number of fine aristocratic buildings are also rising along the routes leading to the lake, especially on each side of the grand *Avenue des Champs Elysées*.

By-the-by, some people think that the fountains at Sydenham are not equal to those at Versailles, and yet we all know that it was the intention of Sir Joseph Paxton to make them not only equal, but superior to anything to be seen either at Versailles or elsewhere. As I have not been at Sydenham since the Crystal Palace was finished I cannot form an opinion of the fountains; but, judging from the illustrations which I have seen of them, I should say they were at least quite equal to those here in point of volume and force. The fountains at Versailles are pretty enough, that must be allowed; but, with similar advantages, others could be still better, for I think the great secret of their effect is the dark background of tall trees all round them. In an open garden, such as the grounds at Sydenham appear to be, their charm would be lost; but, because they rise in the midst of a vast amphitheatre of foliage, they are to be seen to advantage. The fountains at Sydenham, however, might be quite as fine in the course of a few years, and even much finer, without being strict imitations of those at Versailles, where everything is stiff and formal; but their effect will depend as much on the arrangement of the ground and the grouping of the trees as on the power of the water-works. There is, in the grounds of the Tuilleries, a simple *jet d'eau*, which is quite as beautiful as any of the fountains at Versailles. It rises from the middle of the round basin near *La Place de la Concorde*, and, viewed from the terrace, when it is seen just in front of the fine old Chestnut trees, it has a particular charm.

I do not think that the imitation of the stair fountains at St. Cloud is worthy of Paxton or Sydenham. Something more natural and much grander than that might have been formed. The mountain scenery of Wales or the Highlands would have furnished far better models.

There is at Versailles a circle of fountains called the *Colonnade*. The arrangement is, perhaps, *unique* in its way, and, on a larger scale, something of the same kind would always be pretty and agreeable on a warm day in summer. Here the jets are placed in the centre of elegant vase-like basins, and the water rises some five or six feet, and each fountain appears in a recess of foliage, which is formed by the trees and bushes growing behind being evenly clipped all round and overhead. The fountains are separated from one another by two columns, one at the back, and another in front, and these columns form the supports of ornamental arches (in wood I suppose), covered with carvings, and mounted on the top with urns. In the centre of the whole is a fine group, apparently taken from the Rape of the Sabines, and raised on a low, ornamental column or pedestal. At the back, and far above the fountains, the tall trees rise, and almost darken the place by their sombre shade. *La Colonnade* is very good

in its way, but it is too small, and the design might be greatly improved.

After an interval of nearly two months THE COTTAGE GARDENER has just come to hand, and I see in it the engraving of a churn, which is very similar in principle to that which I noticed at Montfermeil; but the general form of the latter is round, like a small barrel. There is, besides, a zinc tray underneath, in which, during cold weather, a little hot water is put, in order to accelerate the formation of the butter by warming the bottom of the barrel.

There is to be another grand agricultural turn out here next year in the same place as before, and it is not unreasonable to suppose that the number of cattle from foreign countries will be greater than ever.—P. F. KEIR.

PHOTOGRAPHY FOR GARDENERS.

(Continued from page 415.)

We now come to the fancy process.

RED.

Cost.

- | | |
|--|-----------|
| A.—Ten grains bichromate of potash. | } Os. 4d. |
| Twenty grains sulphate of copper | |
| One ounce distilled water | |
| B.—Twenty grains nitrate of silver in one ounce }
distilled water | Os. 6d. |

Spread solution A over common writing paper, and let it dry. After exposure in the frame a faint copy is produced in yellow. This must be washed over with solution B, when a beautiful positive red picture makes its appearance. Wash well in pure water.

LILAC.

Soak one of the red pictures in salt and water—this will cause it to fade out; then place it in the sunshine, when it will again appear, but of a lilac colour.

BLUE.

Cost.

- | | |
|--|-----------|
| A.—A saturated solution of ammonio-citrate of iron | } Os. 3d. |
| B.—A saturated solution of ferro-prussiate of potash | |
| Twenty drops of a thick solution of gum arabic | Os. 3d. |

Prepare the paper on one side with solution A. When dry expose in frame. On its withdrawal wash over the face of the picture with solution B. Soak well in water. Place in a dark drawer until the picture appears distinctly.

BUFF.

Soak the paper in a saturated solution of bichromate of potash. It is then ready for the frame. When sufficiently intense the ground will be deep buff. Soak well in water until the yellows of the picture are changed to white.

Of these processes the RED will be found most useful in copying engravings; the BLUE for sections of fruit or leaves when rapidity is desirable. I have specimens of each description which have remained distinct during six years.—EDWARD A. COPLAND.

(To be continued.)

TO CORRESPONDENTS.

FLOWER-GARDEN PLAN (A. W.).—Your plan is the very best we have seen for a small garden; it belongs to the class called promenade flower gardens. We shall have it engraved, if only to "show up" the star-and-garter style of trigonometry, so prevalent in some parts of the country, and Mr. Beaton, perhaps, will tell you how to plant it; but you ought to know that quacks only pretend to plant gardens they never saw.

NAME OF GERANIUM (A Constant Subscriber).—It is the pretty little *Quercifolium superbum* or *coccineum*. One of the perennials for a small bed.

VIOLETS (Rev. W. C.).—We think the roots of the single Violets must have been in the soil. It is possible, but not probable, that your double Violets should change both their form and colour. The insect which you say destroys the roots of your Peas and Radishes is the

Julus pulchellus, or Snake Millipede. We know of no remedy but strewing a little guano over the soil, or watering it with the ammoniacal liquor of the gas works before sowing. This might drive them away or kill them.

NAMES OF PLANTS (A Constant Subscriber).—Your yellow flower is *Celsia arcturus*. We have no reason to doubt that yours is *Cyclamen Persicum*. (Young Gardener).—It is *Draba verna*, sometimes called *Erophila vulgaris*.

ROBINSON'S LIFTING STAGE (C. G. Cotes).—It cannot be seen anywhere at present. As soon as all arrangements are complete it will be advertised.

SOWING IN A BOX IN A VERANDAH.—Sow *Virginian Stock* and *Nemophila insignis*. The *Stock* will bloom first, and the *Nemophila* will come in before it is gone, and they will look nicely together. You might sow others in pots two months later to succeed them; or you might sow *Mignonette* in the middle of April, and pull the others up as they seeded, or fill with *Geraniums* in June.

COKE FUMES (J. Adams).—There was sulphur in your coke, and this gave off sulphurous acid fumes when burnt. This and an excess of carbonic acid, owing to there being no flue, destroyed the tissue of the *Geranium* leaves. We have warned our readers too often against flueless stoves to have any pity for you. Pick the injured leaves off a few at a time, accordingly as you observe other leaves developed for carrying on the digestion of the plant. *Clematis Sieboldii* and *Solanum jasminoides* are two climbers which will suit your greenhouse.

NUTT'S COLLATERAL HIVE (A Regular Subscriber).—You are only taking a great deal of trouble to end in disappointment. Buy Mr. Taylor's book on bees; it will give you all the information you require, and 4s. thus laid out may save you ten times that expenditure.

PEACH TREES IN POTS (A Learner).—Buy Mr. Rivers's little work, "The Orchard House;" it will give you full information. The failures we have noticed arise chiefly from keeping the trees too warm and giving them too little air. We have them this year loaded with blossom, and with every promise of a crop; but we do not force; we merely protect from frost. We use very weak liquid manure about once in eight days.

RUSTIC WORK (M. W. L.).—We shall soon publish some very excellent designs. Those recently published are ludicrously ugly and vulgar.

HOARE'S SYSTEM OF VINE PRUNING (S. B.).—Hoare wrote very good things about the Vine; but whilst admitting this we would not turn knight-errant on the book's account, supposing it required a champion. Your questions appear to require a regular review of that work; but this would, if expedient, be out of place here. As to pruning Vines it must not be supposed that any particular mode will make an unfruitful Vine productive. In this way has the fruit question been overlaid for years, and all the ink in Britain will, it appears, not suffice at present to write down the fallacy. Some are for the long-rod system, others as firmly advocate the spurring system, and both are equally right according to circumstances. There will be no difficulty in inarching the *Sweetwater* on the cluster if you desire it. Of course inarching will expedite your object. It is understood that the long-rod pruning produces larger bunches than the spur mode.

"GREENHOUSES FOR THE MANY" (J. Russell Smith).—A manual on the cultivation of plants suitable to such structures will be published before long.

NETTING (A Subscriber).—Netting of any kind is a very considerable protection, but no kind of netting is an unfailing protection to wall-tree blooms. It may be left on until the frosty mornings are passed. Fasten the upper edge of the netting to hooks along the top of the wall, and the lower edge of the netting to posts driven into the border about a foot distant from the wall.

CLIMBERS AT FIXBY HALL, NEAR HUDDERSFIELD.—Since we published a notice of these—a notice furnished by a correspondent—we have been favoured with specimens of their bloom, and more beautiful specimens we never saw. Indeed, those of the *Beaumontia grandiflora* and the *Hexacentris* we never saw equalled. They are unmistakable evidence of the skill and care of Mr. Guthrie, the head gardener.

FURZE SEED (Fox Hunter).—To sow an acre for forming a fox cover we think ten pounds of seed per acre will be sufficient.

ANNUALS (A Beginner).—Tom Thumb *Geraniums*, *Heliotropes*, and *Verbenas* are multiplied by the thousands now-a-days at such a cheap rate, that no one wishing to possess a few dozens for the purpose of decorating a small flower garden need be without them. It would be a difficult task to say just what kinds of annuals out of the many you would like, as every one has notions and tastes of his own to please. The following are a few of the best kinds:—

- Ageratum Mexicanum*, hha, blue, 1½ feet.
- Agrostemma cœli-rosea*, ha, flesh, 1 foot.
- Amaranthus*, or *Love-lies-bleeding*, ha, red, 1 foot.
- Bartonia aurea*, ha, yellow, 1 foot.
- Brachycome Iberidifolia*, hha, blue, 1 foot.
- Cacalia coccinea*, hha, scarlet, 1½ feet.
- Calandrinia speciosa*, ha, rose, 9 inches.
- Calendula pluvialis*, ha, white, 9 inches.
- Calliopais bicolor* in varieties, hha, yellow, 2 feet.
- Campanula pentagona*, ha, blue, 1 foot.
- Candytuft*, red and white, ha, 1 foot.
- Centaurea cyanus*, ha, blue, 2½ feet.
- depressa*, ha, black and red, 1½ feet.
- Chryseis Californica*, ha, yellow, 1 foot.
- alba*, ha, white, 1 foot.
- Clarkia pulchella*, ha, purple, 1 foot.
- alba*, ha, white, 1 foot.
- neriflora*, ha, rose, 1½ feet.
- Collinsia bicolor*, ha, pink and white, 8 inches.
- grandiflora*, ha, purple, 8 inches.

Convolvulus minor, ha, various coloured, 1 foot.
 „ *major* or *purpureus*, ha, various coloured, climber.
Crepis purpurea, ha, purplish red, 1 foot.
Dianthus Chinensis in varieties, hha, various coloured, 1 foot.
Erysimum Perofskianum, ha, yellow, 2 feet.
Eutoca viscida, ha, purple, 1 foot.
Gillia tricolor, ha, various coloured, 1 foot.
Godetia Lindleyana, ha, white and rose, 1½ feet.
 „ *rubicunda*, ha, reddish, 1½ feet.
Gypsophila elegans, ha, white and purple, 1 foot.
Helichrysum bracteatum, hha, yellow, 2½ feet.
Hibiscus Africanus, ha, yellow and black, 1½ feet.
Jacobaea, double, hha, red and white, 1½ to 2 feet.
Larkspurs, both tall and dwarf, ha, various coloured.
Leptosiphon densiflorus, ha, purple, 1 foot.
Linaria spartea, ha, various, 9 feet.
Lupinus roseus, ha, rose, 1½ feet.
 „ *luteus*, ha, yellow, 9 inches.
Malope grandiflorus, ha, red, 1½ feet.
Schizanthus pinnatus, ha, various, 1½ feet.
 Sweet Peas in varieties.
 French and African Marigold, double varieties.
 German and China Asters in varieties.
 German and Ten-week Stocks in varieties.
Zinnia elegans in varieties.
Scabiosa atro-purpurea in varieties.
Silene pendula and *amena*.
Saponaria Calabrica.
Malcomia maritima. The last two are suitable for edging plants.
 (HA means hardy annual; HHA, half-hardy annual.)

PAIN'S IMPROVED COTTAGE HIVES (*J. S., and F. Kirkpatrick*).—We do not know where these can be obtained. Write to Messrs. Neighbour and Co., Holborn, London.

STOCKING A RIVER WITH FISH.—*Dr. Brown* will be much obliged by information how to breed and bring up fish for this purpose.

SUNDIAL.—*J. S. L.* wishes for information where he can get one cheap but truthful.

BLOOMING MAGNOLIAS (*Lee Jortin*).—We cannot find any queries upon the subject. Please to write again.

THE POULTRY CHRONICLE.

POULTRY SHOWS.

NOTTINGHAM CENTRAL. (Poultry, Pigeons, and Canaries.) January 19th, 20th, 21st, and 22nd, 1858. Sec., Mr. Etherington, jun., Swinton, near Nottingham.

DEWSBURY. Sept. 2. Sec., Harrison Brooke, Esq.

N.B.—Secretaries will oblige us by sending early copies of their lists.

BLACK EAST INDIAN DUCKS.

IN No. 441 of your useful and interesting Chronicle there is a letter from your correspondent, "QUACK," on the subject of, as he calls them, *Buenos Ayrean Ducks*.

I keep this breed of duck, but have always called them by the name of *Black East Indian*, which I consider to be their right and proper name. Will any of your many talented and well-informed contributors state their opinions as to which of the two names is the most correct? "The Poultry Book" tells us that both *Buenos Ayres* and the *East Indies* claim the honour of this variety of duck, and I maintain that the latter is entitled to the prize, and that *Black East Indian* is the correct name for this species of duck. I have been borne out in this opinion by these two facts:—A friend of mine returned lately from India, bringing with him a native servant from Madras, who, with his turban and handsome Oriental costume glittering with ornaments, came to my house, and, upon seeing my *Black Ducks*, exclaimed, "Ah, sir! I see that you have some of my country duck here." On another occasion a steward of one of the Peninsular and Oriental Company's boats (the brother of my coachman) saw the same ducks, and immediately remarked, "Calcutta ducks, sir. I know them well, and have seen them repeatedly in India. They are an excellent duck, and these are the best specimens of their kind that I have seen in England."

Now, these two testimonies as to the country of the *Black Duck*, called sometimes *Buenos Ayrean* and sometimes *Black East Indian*, in my opinion go a great way to prove that the latter is the correct name. I shall be glad, however, if some of your contributors can throw any additional light on the subject.

I perfectly agree with your correspondent, "QUACK," that these ducks are deserving of a class to themselves at Poultry Shows; and that they are as numerously represented as any others was proved at the late Crystal Palace Show,

where, in the class for any other variety besides *Aylesbury* and *Rouen*, out of fourteen pens two-thirds were *Black Ducks*. I was myself an exhibitor in that class, which Mr. Baily was pleased to say contained "the best show of *Black Ducks* that the world ever saw;" and when I add that I was also the fortunate owner of the first prize pen of that class, which contained *Black East Indian Ducks*, as I entered them, I think I may be excused if I thus take up your valuable space in making these remarks as to the name by which these *Black Ducks* should be called.

Whilst on this subject let me add a few words with respect to the Crystal Palace Shows, which I see are to be continued, and which I sincerely hope will prosper.

For almost all the large Poultry Shows medals are struck, which may be taken instead of money prizes by those who prefer them. Why should not the Crystal Palace Show have its medals also? I for one (and there are many besides myself of the same way of thinking) prefer the medal to be placed on my table to the mere money prize. If that well-known medalist and die-sinker, Mr. Otley, of Birmingham, were intrusted with the execution of a suitable medal for the Crystal Palace Shows I am sure he would do justice to the order, and, if we may judge by the beauty of his large Birmingham medal, please those who may be successful enough to have the option of taking medals instead of money prizes.—BLACK EAST INDIAN.

FANCY RABBITS.

I WAS not a little amused by reading the criticism of my paper on the management of the *Fancy Rabbit* by some one signing himself "VIGILANS," but who, either from inexperience or lack of information on the breeding and rearing of the *Fancy* or *Lop-eared Rabbit*, has made several inquiries and suggestions that could not proceed from the mind or pen of a true Rabbit fancier.

While I beg to thank "Mr. VIGILANS" for suggestions that could only have been made from the single desire of promulgating a right understanding of the subject amongst fanciers in general, I will do my best to answer his questions in a satisfactory manner. Permit me, then, in the first place, to assure him that I do keep *Fancy Rabbits*, and that my brother has done so for years before me, which has afforded me every opportunity of becoming acquainted with their habits in that purely artificial state in which the animal is produced by the art and experience of man.

The rules that I have endeavoured to lay down, as affording the surest prospect of success in the bringing of this artificial creature to the highest state of perfection so acknowledged by the fancy, I have observed myself, and shall continue to observe until the greater success or intelligence of other breeders proves to me that they are incorrect.

My rabbit-house has been erected on the principles that I laid down in a previous paper, and has been fitted with hutches very closely resembling those in the diagram at no very great expense; but where I have found them to be defective in any point I have endeavoured to rectify the failings in the hutch I described when writing on that subject. My brother used to keep his for years in an *empty hay chamber*, which answered the purpose equally well, and his stock invariably appeared to be sleek and healthy. He was not an exhibitor as I have been; and the best proofs of my Rabbits being good ones, and in suitable condition, is the almost invariable success which has attended me in the capacity of an exhibitor, having taken many prizes, including both first and second, at the late Nottingham Show with a pair of Rabbits only four months old. I must say that I was greatly surprised by the suggestion of "Mr. VIGILANS," who seems to consider "old barrels or tea-chests" suitable abodes for creatures that have been, or ought to have been, reared with the most scrupulous care in airy, capacious hutches, permitting of that exercise so essential to the well-being of any young animal. Is "Mr. VIGILANS" aware of the value of a first-rate *Lop-eared Rabbit* possessing most of the required properties? If he is—unless, indeed, he should be reckless of expense—I can hardly think that he would consider an old barrel or tea-chest ample accommodation for the pampered favourite that has cost him two,

three, or four pounds. I grant that such a hutch will do well enough for a school-boy learning (what is, generally speaking, so hardly earned) experience, and who has laid out his 6d. or 9d. on a common Rabbit; but I can assure you that it would not insure success if such a practice was generally adopted; the valuable and delicate inmate would soon become diseased by the united evil effects of its own effluvia and inability to exercise. As far as one can it is well to take Nature for our guide in the treatment of those dumb creatures intrusted to our care; but it would never do to apply the resources of Nature *alone* to an animal so far removed from its natural condition in properties, habits, and constitution. If you were to turn your stud of Fancy Rabbits from the hay chamber or rabbit-hutch, properly so called, into a warren, I think you will agree with me that very few would be in a satisfactory state after the first few days. If we were to treat our race-horses, fancy poultry, or cattle as they treat themselves in a state of nature, we should, in the first instance, lose numbers by disease and death, while the remainder would become degenerate and inferior. Moreover, if animals attained the required standard of perfection in a natural state we should never be at the expense of cultivating them as we do; nor would those highly commendable associations be formed and carried into effect, whose principal object it is to cultivate and bring to perfection the several varieties of useful and ornamental domestic animals.

Before I conclude with the subject of the hutch I will add, that the hutch in the diagram is necessarily more expensive than a tea-chest in the first instance, but its greater convenience, healthy accommodation, and general appearance will render it *by far* the cheapest in the end. Where expense is *no* object, and where the size of the rabbit-house permits of it, of course it would be much better to arrange the hutches parallel with, and not one above the other; but when it is the intention of the fancier to breed any number of specimens, which must be done to enable him to select a succession of first-rate stock, and when the financial condition is not replete, the drawback of the latter plan becomes unavoidable. If the hutches are built as I directed, fitted with proper conductors for the moisture, and tilted rather backwards, they will last for years without the necessity for repairs, or the nuisance of a constant effluvia over and above what all Rabbits, kept in any way whatever, exhale.

As "VIGILANS" truly remarks, the Rabbit is naturally a *cleanly* animal, and this property it retains in that most artificial condition in which it is presented to the fancier of the present day, so that almost invariably we find the excretions in one or more *corners* of the hutch, and not scattered over the whole. This fact renders the construction of the hutch more simple, and its durability more perfect. The corners selected are usually the *dark* or *far* corners, where the conductor is situated, and in this case the greater part passes off at once, and prevents the possibility of any unhealthy exhalations.

Permit me also to say what pleasure it would afford me to show my Rabbits and hutches to "Mr. VIGILANS," should he ever turn his steps towards Beverley, that I might practically demonstrate those facts which I have so insufficiently developed in my papers on the subject.—PERCY BOULTON.

DUBLIN AMATEUR POULTRY SOCIETY.

REPORT.

THE fourth annual Exhibition of this Society was held in the Agricultural Museum of the Royal Dublin Society on the 18th, 19th, and 20th of December last, and your Committee have great cause to congratulate the Society on the improvement that has taken place in the several breeds of Poultry since the formation of the Amateur Poultry Society in the year 1852. Passing in review the specimens that have been exhibited since that period the advance in the perfection of markings and size was apparent even to the casual visitors at the Shows. In the Dorking class the improvement has been marked, not only in the size of the birds, but in the purity of the blood, as indicated by the shape and accuracy of feather—a feature that in England has been too little regarded, in the anxiety to force size by

cross-breeding, at the expense of the natural qualities of the breed. To enter on the subject of the advantage that has been derived by the country since what has been termed the poultry fancy has extended the dissemination of improved breeds, we have but to refer to the export of the quantity of eggs and fowls sent daily from Ireland to various parts of the United Kingdom, which now count, not by units of eggs, but by crates holding 1,000 each. But a more gratifying result of the labours of your Committee is the benefit to society at large, as shown by the fact that since the starting of your Society the Irish fowls sent to the English markets, which were inferior, are now on a par with the best English. The Society, as this report has already informed you, has seen its fourth annual Exhibition, whereby the expectations of the originators have been fully realised; but commensurate with the improvement of these Shows there is a commensurate expense, and on this head your Committee regret there are grounds of complaint as to apathy on the part of the public, for while the Committee have given time and exertions to the carrying out of these projects for the benefit of the public, the public have not come forward to aid the Committee in their efforts; and, in now submitting our account to the Society, we hope such steps will be taken as will render the Society permanent, and prevent one so useful, and originated for so good a purpose, from falling to the ground for want of common energy.

J. R. DOMBRAIN, }
R. P. WILLIAMS, } Hon. Secretaries.

EGG-PRODUCTION OF HAMBURGH FOWLS.

HAVING read the remarks of "SILVER-PENCILLED HAMBURGH" in your paper, and thinking there might be some persons who would consider it an exaggeration, I have been induced to send you the account of four of the same kind of hens kept by me:—

January 13	May 89	September.. 54
February .. 68	June 87	October 49
March 81	July 79	November .. 6
April 86	August 81	December .. 14

These were kept in an aviary fourteen feet by five feet, and never were let out; and it will be seen the average of each hen is considerably over 150, being 176, whilst your former correspondent's was 190 each; but his had the advantage of a good grass run, a thing which mine never saw.—E. B., Oxford.

COMB OF POLAND FOWLS.

SOME interesting observations were in the 438th number of THE POULTRY CHRONICLE from Mr. Williams on the subject of Crested fowls. Amongst other things that gentleman said, "Should Crested fowls have a comb in the form of two spicula?" It is now the fashion to breed Polands, Black, Gold, and Silver, without any comb. Well, I possess some of the finest fowls I ever saw (Polands), and procured them from first-rate *combed* birds, and they all have very fine crescent-shaped combs, which, in my opinion, despite "SAM SLICK," add very much to their beauty and sprightliness, and support the topknot, preventing it from falling over their eyes. Now, in the fashion of breeding Polands *sans* comb I consider that form is very, very often sacrificed. I know many persons who have splendid Polands, but whose fowls fetch half their right price from being combed. Do support the "comb movement!" It is natural for birds to have combs, and they add to their beauty and support the crests. These are the three benefits.—THE COMB CHAMPION.

P.S.—Can you tell me what is the meaning of the term "vulture hocked?"

[Feathers projecting beyond the knees or hocks of a bird, as they do in some birds of prey, render the bird, in the dialect of the poultry-yard, "vulture hocked."—ED. C. G.]

ON THE BREEDING OF GAME FOWLS.

I WISH to make a few remarks on the breeding of Game fowls. Firstly, it is usual here to put the cock selected to

breed from with the brood hens about Christmas. The number of hens should never exceed *six*, and in cold weather *four*, or even *two* (but not less than *two*) are quite sufficient; in fact, I have found *two* do the best. It is not at all necessary that they should begin to lay before February, at which time you must begin to save their eggs for sitting. Perhaps it is better that they should *not* lay before that time, as the *first* clutch of eggs generally produces the strongest chickens, and no one here ever thinks of sitting a Game hen before *March* begins. Number of eggs about *eleven*, as too many will often spoil the whole. It is generally allowed here that *cocks* hatched about the end, or say the last ten days in *March*, are the finest birds in every respect. For "pullets" *April* does well, or even *May*. Any person not well acquainted with breeding will scarcely conceive the amazing difference there is between cock chickens bred in the *end of March* and those bred in the *end of June* or later, although from the same parents. Those bred in *March* will *run high on the leg, be light fleshed, and large boned*, while those bred in the summer will *run low on the leg, be heavy bodied, and small boned*. The *March* birds will be consequently much finer birds (supposing the breed to be the same), though of no heavier weight than the late birds.

In breeding *never cross colours*, but if you must cross do it as near as possible to your own feather, though from a *strain* as far removed as you can. Game hens, if properly fed and attended to, generally hatch at the end of the *twentieth* day. The *first egg* of the clutch laid should be rejected, as it is almost invariably smaller than the rest (except, perhaps, the last one), as should also those laid *after* the hen begins to *cluck*. Eggs laid after a day's interval are generally the best for sitting. All should, of course, be carefully marked and dated as they are laid. If you wish to have *strong* chickens *never* breed from *stags* or *pullets*, as no fowls are fit to breed from until *after* their *second moulting*. If you are breeding *in and in*, put a *known, good, well-made old cock* with your *two-year-old hens*, or what is, perhaps, better, a good *two-year-old cock* with your *old hens* which have already thrown good chickens. If you are *crossing*, breed from a *two-year-old cock* with *three-year-old hens*, as the cock is in his *prime* at *two*, but the hen at *three* years old for breeding from, and let the hens be *sisters*, if possible, to prevent confusion about their eggs.

With regard to what your correspondent, "W.," says about my remarks upon weight, he seems to forget that before a *main* of cocks *used to be* fought they underwent somewhat the same training for some weeks as a prize fighter, which training often brought them down a *pound* in weight; so that "W.'s" weights for the *Knaresborough main* which he alludes to would not be very dissimilar to mine *before the training*, as he could well *add a pound* to each of his weights named if the birds had been on their walks instead of going to fight: 4 lbs. 8 oz. was the favourite *fighting* weight *here*, and *such birds*, when out on their walks, weighed from 5 lbs. 3 oz. to 5 lbs. 9 oz., which is about the best size in my opinion, though I have seen several 7 lbs. weight. *Grey Duckwings* are, I fancy, *purser* bred than *Yellow Duckwings*. No one but a *breeder of Game* can judge *Game fowls* properly, and every *would-be* purchaser should be allowed to *handle birds at shows with the consent and in the presence* of the exhibitor or one of the Committee, as I have often done myself.—NEWMARKET.

PIGEONS.

CLASS 3, VARIETY 4.—OUR COMMON FLYING TUMBLERS.

Of all the breeds or varieties of domestic Pigeons none are, I think, so interesting and amusing as the Flying Tumblers, nor is there any breed or variety that contains so numerous an assortment of colours or sub-varieties; and by the cultivating of them the fancier may find amusement, both as regards their training for high flying and tumbling, and for their diversity of colour and accuracy of marking.

They undoubtedly owe their origin to the old English Tumblers last mentioned, crossed with the Dutch or Continental variety; and according as they are more or less highly bred, so do they in form and appearance approach

the make of the high-bred Short-faced Tumblers, or the larger mousey or more jowler-headed continental breeds. It will, therefore, become apparent that much latitude is given in this breed or variety to form; but they will be the more valuable as they approach the standard of the Short-faced birds, always provided that they are sufficiently stout and of constitutions sufficiently strong to take long and high flights, in which their great attraction consists, and which the very high-bred and delicate Short-faced birds are too weak to perform. At the same time, it must not be overlooked that what allowance is made in this respect must be, in some measure, made up for by accuracy of marking and goodness of colour, as well as by their being bred and breeding true to their particular sub-variety. I am not aware of any colour common to our domestic Pigeons which may not be met with in this variety. Their plumage is as follows:—Whole colours, as black, blue, chequered, silver, dun, kite, red, yellow, buff, drab, ash-coloured, and mealy. A few are quite white; but by far the greater number are of one of the before-mentioned colours mixed with white. These mixed colours have various names, as follows:—A Mottled is an otherwise coloured Pigeon, but having white feathers sprinkled over the head, neck, and shoulders; and according to the colour so is it called, a Black Mottled or a Red Mottled, as the colour indicates. A Grey Mottle is one that reverses this order except in tail and flight, which must be dark, the remainder of the plumage white, with a few dark feathers interspersed. These, when regularly mottled, are very pretty, and are sometimes called Ermine Tumblers, a very appropriate name. A Grizzle is one in which each and every feather is a mixture of white with some other colour, and is termed a Blue Grizzle or Black Grizzle, as the colour shows. Red Grizzle and Strawberry are synonymous. A Huggle is an intermediate nondescript—neither a Mottle nor a Grizzle. A Splashed is something similar—between a Mottled and a Pied. A Pied is a Pigeon whose colour is divided into certain patches or forms, which give rise to distinctive names. The first I shall mention is the Beard Pied, or, as it is called, the Blue-bearded Tumbler or Black-bearded Tumbler, &c., according as the colour of the body directs. I consider this marking peculiarly a Tumbler's own, as I have noticed a tendency to it in some families of every variety of the breed which has come under my notice, and never in any other sort. To be accurate in marking, the under mandible should be light, with a white patch under the back reaching from the corners of the mouth to the eyes, and being nearly a finger's breadth under the bill, and gradually dwindling to a point at the eyes, so as to give the appearance of a white beard, from which the name is derived. From seven to ten extreme pinion or flight feathers must be white on each side, as also the whole tail, upper and under tail coverts, and the feathers on the rump, vent, and thighs, the rest of the body being of one colour; Blues and Silvers, however, having black bars on their wings. On the accuracy and evenness of their marking does their proportionate value consist. If dark feathers occur on the thighs they are termed foul-thighed. If too much white down the neck it is said to be slobbered.

The Piebald or Bald-headed Tumbler, called for shortness a Baldpate, resembles the preceding except the head, which is all white. The line passes a little below the beak and eye, and must be straight and even all round the head, when it is said to be clean cut; if otherwise, slobbered or foul-headed, and accordingly depreciated in value. Flight, tail, rump, vent, and thighs white, like the Beards. Both must have clear pearl eyes. Indeed, this is essential for all Tumblers.

Beards and Baldheads are accounted the best and highest fliers.

The Magpie Tumbler. This sub-variety derives its name from the distributions of its colour somewhat resembling those of our common Magpie (*Corvus pica*). The marking is evidently German, in which country the *Elster Tumbler* is more cultivated than in England. About twenty years back I remember seeing many very good Short-faced Magpie Tumblers in London; but these seem now to have degenerated into a comparatively worthless toy Magpie, bred so coarsely as scarcely to be recognised as a Tumbler, and also, in a great measure, to have lost the faculty of tumbling. As to marking, the whole of the wings, the lower part of the breast,

and thighs must be unspotted white, while the rest of the body is coloured; and they are, accordingly, named Black, Red, or Yellow Magpie Tumblers, as the colour may be. The scapular or epaulet feathers on the back being dark and overlaying the wing give the white wing rather a narrow appearance when closed.

Of the German (*Kappen Burzel Tauben*) Helmeted Tumbler Pigeon I have only seen one pair of good birds in this country; but, like the Magpies, a lot of coarse birds introduced to take the place of our toy Helmets, which, however, they do not represent, wanting the dark flights. The plumage of the Helmeted Tumblers is white, except the top of the head and the tail, which are coloured, either red, yellow, black, or blue, but red and yellow predominate. The helmet, or colouring of the head, from which they derive their name, reaches down to the corners of the mouth, crosses the line of the eyes, going evenly round the head. The upper mandible should be coloured, the lower white, the eyes pearl. Occasionally they have feathers on the feet: when that is the case those from the hock or heel downwards should be coloured like the head and tail.

White-shouldered Tumblers. I know not the fancy name for these, unless it be "Handkerchief," from their having, as it were, a white handkerchief dropped on their back. The whole of the wing shoulders, including the scapular feathers, are white, the rest of the plumage red or yellow. I do not remember seeing any other colour.

Saddle-backed Tumblers are the exact reverse of the last mentioned, the shoulders of the wings and scapular feathers being the only coloured parts, the rest of the bird being white. I do not think much of them, as I suspect them to be a cross with a Turbit; but, supposing that all the twelve colours were produced on the ten different markings, it would make 120 sub-varieties of this one variety.—B. P. BRENT.

OUR LETTER BOX.

MR. HEWITT AND HIS CALUMNIATORS.—We have had various letters from very numerous well-known exhibitors all condemning Mr. Worrall. We have heard from good authority that Mr. Hewitt has had seventy letters all to the same effect, and all from parties connected with the breeding and exhibiting of poultry. They all coincide in hoping that Mr. Hewitt will continue to act as a Judge. We join in that hope, for we know that exhibitors have confidence wherever he helps to adjudicate.

LARGE EGGS.—"In the beginning of the present month (March) one of my Dorking hens laid an egg weighing three ounces and three quarters, and another three ounces and a half, and last year I had one weighing four ounces, all avoirdupois. I might also add that one of my Aylesbury duck eggs of last year weighed five ounces and a half. Might I ask, through your pages, if eggs of the above size are common? and if so, what is the weight of the largest perfect egg on record?"—AN AMATEUR.

PLUMAGE OF BRAHMAS.—MAKING HENS BROODY.—"Will you kindly tell me what the plumage of light Brahmans should be, and whether there is any food that will really make a hen broody?"—A WILTSHIRE POULTRY-KEEPER.

[Correct light Brahma Pootras should have white plumage with black-striped hackle, dark tail, and black flights. A hen can only be broody by having laid her eggs, and that can only be accomplished by stimulating food, which is a great evil to the bird. In the dark ages they used to pluck the breast feathers and sting the flesh with nettles. The itching made the hen sit close to the eggs, but her broodiness often ceased when the itching was allayed.]

RAISING BLACK-BREASTED GAME BANTAMS.—"I have a great desire to raise some Black-breasted Red Game Bantams. What do you say to a cross between a Red Game cock and a Bantam hen to correspond in colour?"—DICKY SAM.

[Take the smallest Black-breasted Red Game cock you can find, and put him to a properly-coloured Bantam hen. Select the smallest cock you can find among the produce, and next year put him to the mother. After this put father to daughter, and mother to son, and you will have made your Bantams, choosing them for the qualities you require. Your first produce will probably this year be good, but by doing as advised you will have them better every year.]

EGG-EATING HENS.—"I shall feel much indebted if you will inform me of a preventive to fowls eating their eggs. Having a small lot of Cochins, I am unwilling to kill them, and they all, unfortunately, appear to have this propensity."—BAYLIS.

[Hens learn to eat their eggs from seeing another do it. If there is no lime to be had in their haunts, then they eat them for the sake of the shell. Provide them with some bricklayer's rubbish, old ceilings, &c. It is a very difficult propensity to cure. One way is to watch them, and take the egg directly it is laid, and after a few days they leave off eating them. Another is to supply their nests with some hard artificial eggs having the exact appearance of natural ones. The discouragement

consequent on pecking these will sometimes cause them to give it up for a bad job.]

DUCKS PARALYSED (*W. D. P.*).—The unnatural circumstances in which the ducks are kept, without access to water, and in a confined space, where they are debarred from natural insect food, have evidently produced a degree of paralysis which may be regarded as incurable.

BUFF POLISH FOWLS (*W. C.*).—We have no connection at all with the second edition of "The Poultry Book." What was stated in the first edition we abide by.

POULTRY FEEDING.—"Will you or any of your correspondents give me advice as to the best way of feeding poultry, the kind of food, and the quantity they should get? This may also aid others in a similar position as myself. I may say that I only keep Spanish and Dorkings. During winter they have a good large run, with plenty of grass, &c.; but now, as the gardeners are busy putting things to rights, they have to be confined in a space about ten yards by thirty yards. I give them oats twice a day, and potatoes and barley meal once. Of these I give them as much as they can eat; indeed, they have always some of either of the two kinds of food lying beside them: this I am pretty sure is too much. I also give them occasionally a little whole Indian corn, which they are very fond of; also some raw liver once or twice a week, and have always a turnip lying or hung up for them to peck at. This they are also fond of.—L.

"P.S.—One of my best Spanish hens with which I am breeding has begun to cough or chirp as if she had got a cold, although she is kept in a capital dry, warm house. Should I remove her from the others, and lose her for breeding, or what should I do?"

[Your Spanish and Dorkings will not thrive in a space so confined. You will see what was said last week about poultry feeding. It is quite applicable to your case. Do not rest satisfied with hanging up a turnip for the fowls to peck, but give them green food daily. A hen "kept in a dry, warm house" is on a system promotive of disease. Shelter fowls, but let them have abundance of air and exercise. Let the hen out, and put her upon low diet, with as much green food as she can eat. Separate her from the others.]

BLUE FANTAIL PIGEONS.—"I have a pair of blue Fantail Pigeons promised me. I keep no other Pigeons. They will be placed in a pigeon-box attached to the gable end of a stable looking north-west. Is this position likely to suit them? Will they fly away if I do not confine them? and if so, for how long must I keep them in? What should their food be, and what quantity should be allowed for a pair? I shall be much obliged if some of your correspondents can afford me any information on the subject. I should also like to know the usual price of a pair."—HAWTHORN.

[We should advise a southerly aspect. If, however, no better place can be provided we fear you will lose most of the early and late broods. The nests should be roomy, say one cubic foot in size, so that their tails may not be rubbed or cramped, which would spoil their appearance and carriage. As you have no other Pigeons we should advise you to put a net over their cove, and keep them therein for at least a week, that they may know the place. Old tares, small beans, or wheat, are the best food for confined Pigeons, but when they have their liberty almost any corn or grain will do. A moderate handful to each bird is about a fair allowance daily. Blue Fantails are rather scarce, and they would be worth from 10s. per pair and upwards, according to their merits in respect to the carriage of the head and tail, the number of tail feathers, length of neck, the trembling at the same, and clearness of colour.]

LONDON MARKETS.—MARCH 30TH.

COVENT GARDEN

We have not so good a supply this week, the change in the weather having much to do with it; there is, however, quite sufficient for the demand, notwithstanding a considerable quantity of the produce raised by market gardeners round London finds its way to the provincial markets in the north by railway, at least twice a week, in consignments from our salesmen to their agents. Hothouse productions comprise *Pines*, *Strawberries*, and new and retarded *Grapes*. *Asparagus*, *Sea-kale*, *Cucumbers*, and *French Beans* are all abundantly supplied. *Florists' flowers* have much improved, and their presence already begins to impart that cheerful and lively appearance for which this locality has obtained such a world-wide celebrity. Continental produce is now confined to the usual description of salading, and *Globe Artichokes*. *Potato* trade heavy.

POULTRY.

The dissolution of Parliament, and the consequent falling off in trade, is not without its effect on the market. As usual, good poultry is very scarce, and our quotations being for the best only, it does not appear as it would, if we spoke of the inferior sorts.

Large fowls.. 6s. 0d. to 7s. 0d. each.	Widgeons.. 1s. 6d. to 1s. 9d. each.
Smaller do..... 4s. to 5s. 0d. "	Teal 1s. 0d. to 1s. 3d. "
Chickens..... 4s. to 4s. 3d. "	Pigeons 9d. to 10d. "
Goslings .. 8s. 0d. to 8s. 6d. "	Rabbits.... 1s. 5d. to 1s. 6d. "
Ducklings.. 5s. 0d. to 5s. 6d. "	Wild ditto..... 10d. to 11d. "
Guinea Fowls 3s. 0d. to 3s. 3d. "	Leverets.... 3s. 0d. to 4s. 0d. "
Wild Ducks 2s. 3d. to 2s. 6d. "	

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